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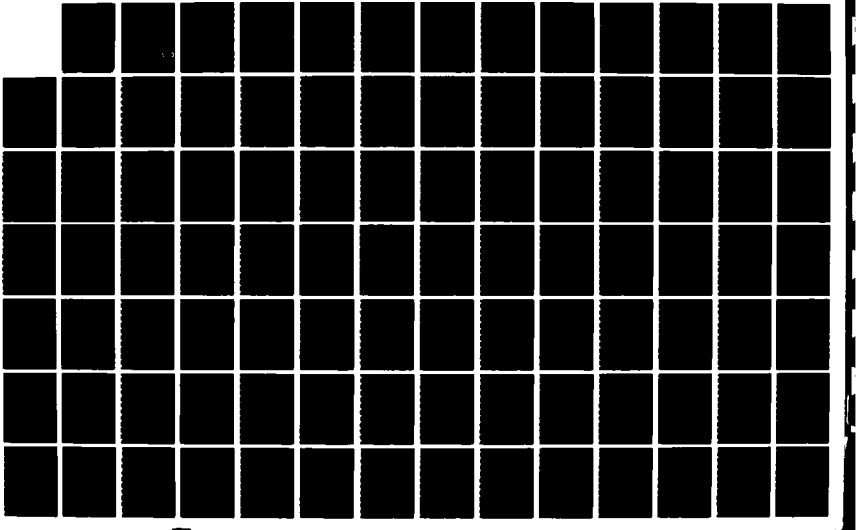

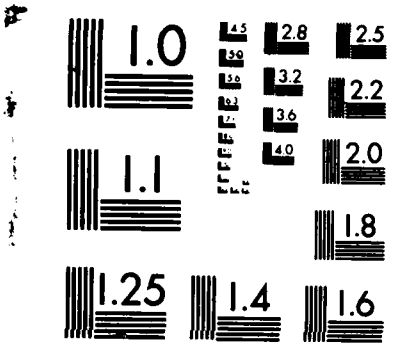

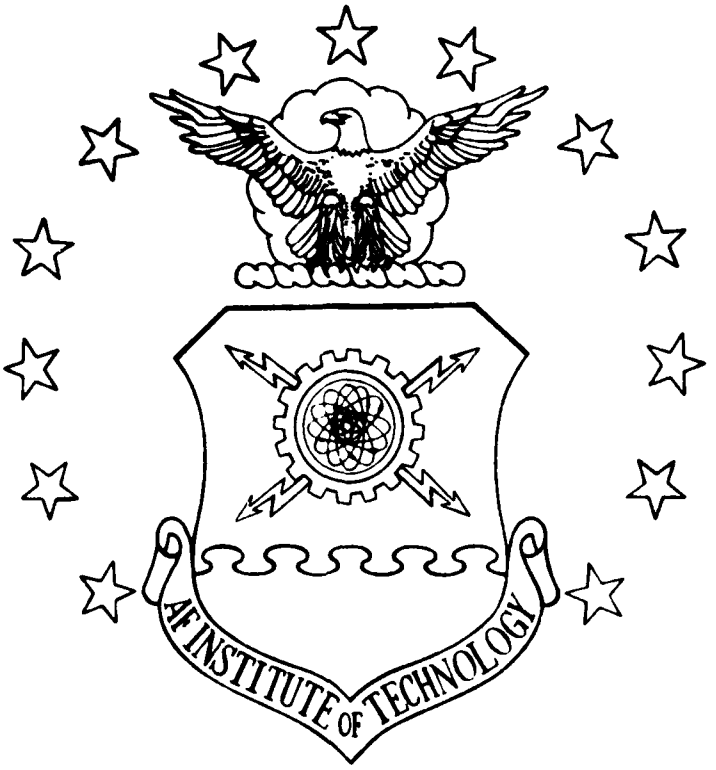

THE SENIOR MILITARY LOGISTICIAN: AN EMPIRICAL STUDY OF UNITED STATES AIR FORCE COLONELS

THESIS

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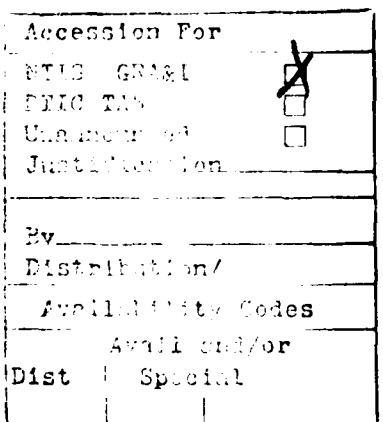

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THE SENIOR MILITARY LOGISTICIAN: AN EMPIRICAL STUDY OF UNITED STATES AIR FORCE COLONELS

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Adelle R. Zavada, B.S.
Captain, USAF

September 1986

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Adelle R. Zavada

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Abstract

There has been an on-going debate regarding the proper qualifications that senior military logisticians should possess. The qualifications of colonels currently serving in the logistics career fields were assessed to determine how well these officers fit a model of the professional senior military logistician developed by Captain Allan D. Overbey. A survey was used to gather information on the backgrounds of current senior military logisticians, as well as their opinions about the model. Another survey was used to develop weightings for the model components. These weightings were used to score the respondents against the model based on their background information. A score of 100 indicated a "perfect fit" to Overbey's model. The observed scores ranged from 24.5 to 100 with an average of 65.8.

This research provided extensive data about the Air Force senior military logistician's background and provided support for the validity of Overbey's model. The research also suggested that current career development policy for Air Force logistics officers may be adequate for producing adequate numbers of well qualified senior military logisticians. Recommendations were made for further research to provide support for this conclusion and for

possible uses of Overbey's model as a tool for promoting career broadening among Air Force logistics officers.

THE SENIOR MILITARY LOGISTICIAN: AN EMPIRICAL STUDY OF UNITED STATES AIR FORCE COLONELS

I. INTRODUCTION

General Issue

Military logisticians play a vital role in planning and integrating our nation's defense resources to "create and sustain effective combat operations" (14:1). There has been an on-going debate regarding the proper background and qualifications Air Force military logisticians should possess to effectively fulfill that role. The argument centers mainly on whether military logisticians should be generalists or specialists. This issue has been brought to the forefront by Lieutenant General Leo Marquez, Deputy Chief or Staff, Logistics and Engineering, HQ USAF, who has expressed concern that senior Air Force military logistics managers are "unprepared to manage the totality of our complex logistics system" (9:10). Lt Gen Marquez attributes this deficiency to "stovepiping", a term used to describe the situation in which officers in the logistics fields enter into one of the specialty areas (e.g. maintenance, supply) and remain there throughout their careers.

The stovepiping phenomenon is commonly blamed on the lack of a formal career development plan to cultivate Air

Force logisticians with a broad base of logistics related experience. AFR 36-1 defines the logistics career areas as maintenance, transportation, supply, procurement and logistics plans (3:A13-2). It is presumed that there is a preponderance of functional specialists within these career fields over more broadly experienced generalists. For this reason, there have been various attempts to create a formal system to develop Air Force logisticians who can understand and effectively integrate the individual logistics functions from a systems perspective.

As early as 1965, the thesis work of Kenealy and Canady recommended a career development program to develop qualified logistics managers that could apply to the Navy, Army and Air Force (7:62). Then in 1967, the research of Dawson and Tierney produced a dual track career progression model for Air Force officers in the logistics fields (1). Mayo proposed another plan for Air Force logistics officer career development in 1971 (12). There have been other career development proposals since then, however, none has ever been adopted by the Air Force.

The most recent career development proposal for Air Force military logisticians was generated in early 1985 by the Air Staff as a result of Lt Gen Marquez's initiative in this area. This new plan originally called for at least 20 percent of the colonels in the logistics areas to have served in two or more logistics fields before attaining the

rank of 0-6 (13). The final outcome of the plan, however, has been merely to promote cross-flowing of officers between the core logistics functions without "getting bogged down in a bureaucratic process" (5). Thus, no goals were established for broadening a specific number of logistics officers per year, nor were specific procedures implemented to selectively identify candidates for cross-flowing. The plan has become more of a philosophy to encourage generalization rather than a formal career development program in itself (6). Therefore, the career development of our Air Force military logisticians remains, as in the past, a relatively unstructured process.

In late 1985, Captain Allan D. Overbey tapped some of the best logistical minds and developed a model of the essential qualities, characteristics, and background requirements that a senior Air Force military logistician should possess to meet the requirements of a "well rounded logistician" (14:5). The model itself was not meant to be a formal career development plan, however, it did provide a framework by which officers in the logistics fields might attempt to pattern their own individual careers. Therefore, since a formal career development plan for Air Force military logisticians has never materialized, it may be that Overbey's model provides the best career progression guidance currently available to today's aspiring logisticians.

Specific Problem

Although there has been much concern over the shortfall of the current Air Force personnel process to produce "qualified" logisticians, no attempt has ever been made to investigate the effect this process has had on the qualifications of today's senior military officers in the logistics career fields. The presumption was that stovepiping had led to a preponderance of functional specialists rather than broadly experienced and educated general logisticians. There was, however, no current information to conclusively support this presumption. The extent to which stovepiping had previously shaped the profiles of today's senior military logistics officers was unknown. Therefore, research was needed to determine the background and qualifications of current senior Air Force military logisticians who are products of a loosely structured career development system.

In addition, most of the career development proposals of the past have been made with little or no input from the officers to be affected by those proposals. Research was also required, therefore, to determine what senior Air Force military logisticians think is important for satisfying the requirements of a general logistics background. Only after research of these two areas was accomplished could a true assessment be made of the present career development process and guidance.

Research Objective

The purpose of this research was to determine the extent to which the Air Force has developed "qualified" senior military logisticians despite the lack of a formal career development plan. To objectively assess the extent to which current senior military logisticians can be considered qualified, the model developed by Overbey was used as a measurement standard. The model outlines the essential qualities, characteristics, and background requirements for a senior military logistician. By comparing information on the characteristics and backgrounds of senior officers currently assigned in the logistics career fields to the model, an overall assessment could be made of the qualifications of the current Air Force senior military logisticians.

Since Overbey's model has the potential to serve as a template for the "ideal" senior military logistician and as a possible road map for future career development plans, it was important to determine the senior logistics officers' acceptance of the model. Therefore, a secondary objective of this research was to determine the field level acceptance of Overbey's model.

Research Questions

To meet the objectives of this research, the following investigative questions were posed:

1. How well do officers currently assigned in the logistics career fields fit Overbey's model of the professional senior military logistician? To what degree do they meet the criteria? In what areas are their strengths and weaknesses?

2. Are there significant differences among officers in the various logistics functional areas in the degree to which they fit Overbey's model? If so, what are those differences and what are their implications?

3. Do today's senior officers assigned to the logistics career fields view themselves as generalists or specialists? Is there any relationship between the officers' views of themselves as such and their degree of fit to Overbey's model?

4. What is the opinion of senior officers in the logistics career fields regarding the essential characteristics, qualifications and background requirements identified by Overbey's model? Do they agree or disagree on the criteria comprising the model?

Scope

For the purpose of this study, a senior Air Force military logistician was identified as an officer in the rank of colonel (0-6) who possessed either a duty, primary or secondary Air Force Specialty Code (AFSC) for Director of Logistics (0046) or Deputy Commander for Resource Management (DCR) (0096). In addition, colonels who possessed one or

more duty, primary, or secondary AFSCs in the logistics areas of maintenance (40XX), transportation (60XX), supply (64XX), procurement (65XX) and logistics planning (66XX) were also included.

Although Overbey's research operationally defined a military logistician as a "senior officer (colonel or above) serving in an identified AFSC as Director of Logistics" (14:8), this study expanded the population to include senior officers in the other logistics fields. This was done because the career guidance in AFR 36-23 for these specialties cites accessions to Director of Logistics positions as logical career progressions. Thus, officers possessing these AFSCs represent the pool from which Directors of Logistics might be drawn. The Deputy Commander for Resource Management (DCR) was included because officers in this position are charged with "providing logistics and financial support for the wing mission" which includes contracting, supply, transportation and logistics plans (8:18). The function of the DCR, therefore, is similar to the Director of Logistics.

Due to significant variations expected in the backgrounds and qualifications of these senior military logisticians, a census of the colonels was conducted to provide a more accurate assessment of the population. The analysis was limited only to colonels due to the administrative constraints involved in surveying general officers.

The analysis focused on the criteria identified in Overbey's model as essential to the senior military logistician. For the purpose of this research, these criteria were grouped into three major dimensions: experience, education and training, and professional attributes. The study made a complete comparison of senior military logisticians to all the components of Overbey's model. However, comparisons to the professional attributes dimension, were based mostly on the perceptions senior Air Force military logisticians had of themselves. A method was developed to quantify the model for measuring the "degree of fit" of the population to the model. The acceptance of Overbey's model by senior officers in the logistics fields was made by comparing the respondents' opinions against those of Overbey's Delphi participants upon whose opinions the model was formulated.

Potential Contributions

Extensive data on the backgrounds of current senior Air Force military logisticians was gathered to provide an assessment of the adequacy of the present career development system to produce "qualified logisticians". The opinions of these officers were also sought on the criteria comprising Overbey's model of the professional senior military logistician. There are several potential contributions that this research may offer.

1. The research can be useful in evaluating the need for further formal career development proposals for Air Force military logisticians.

2. The research provides valuable insight into the requirements considered important in a military logistician's career development by senior officers serving in the logistics career fields.

3. The validation of Overbey's model may foster its potential as an individual career planning guide for officers in the logistics career fields.

4. The quantification of Overbey's model may promote its usefulness as a standard for further evaluating the qualifications of military logisticians.

Background

The background material relevant to this research is based upon three themes: the issues surrounding the generalist versus specialist debate, the formulation and composition of Overbey's model, and current career development guidance for officers in the logistics fields.

Generalist vs Specialist. In the debate over whether the logistics field needs generalists or specialists, two important definitions arise. In the context of this research, a "generalist" will be defined as someone with a broad base of experience and knowledge across the logistics spectrum. The generalist may have been awarded more than one logistics AFSC in a career or may have gained experience

through career broadening in areas not requiring an AFSC change. A "specialist" on the other hand, will be defined as someone with extensive technical knowledge and experience in one specific logistics discipline. The specialist spends an entire career in one AFSC and usually has not career broadened.

The argument against specialization has usually been the strongest or at least the most publicized. Those who favor a generalized logistician development program cite some key disadvantages to specialization.

One problem with specialization, according to Dr. Robert G. Stein, editor of the "Futuristic Logistics" feature of The Logistics Spectrum, is that it often leads to functional parochialism which can inhibit mission accomplishment. This functional parochialism tends to foster sub-optimization, a situation in which one area is optimized at the expense of the overall logistics system. Dr. Stein believes that such problems as spare parts overpricing, improper disposition of items, and high numbers of non mission capable aircraft can be attributed to this functional parochialism. Dr. Stein, along with Lt Gen Marquez, is a proponent of classifying military personnel as logisticians with functional specialty suffixes for maintenance, supply, etc. on their AFSC codes, rather than having separate AFSCs for each discipline (17:48).

Jerome G. Peppers, Jr., former associate dean of the Air Force Institute of Technology (AFIT), School of Systems and Logistics, also believes that individuals specializing in one function tend to sub-optimize. Professor Peppers feels that specialists often become bureaucrats, managing the system without understanding the parts. He also feels there is a tendency for specialists to micromanage, which leads to centralized decision making and inefficiency (15:2-3).

There also seems to be a belief that the full potential of leadership is somehow hindered by specialization. Colonel Fred Gluck (USAF, Ret), a logistics consultant and author on the subject, feels that military logistics is so complex that those appointed to senior management positions cannot provide effective leadership without a depth of logistics experience and understanding (4:3). Lt Gen Marquez has stated that someone who demonstrates leadership in several career fields and "can see the big logistics picture" is more valuable than a person who manages only in one field (10:3).

There are others who provide testimony to this belief that generalists make better leaders than specialists. Thomas E. Cronin in the book, Military Leadership: In Pursuit of Excellence, states that "[Good leaders] have been the generalists." Cronin says, however, that "society rewards the specialist" (19:52). In his 1973 report on "Air

Force Logistics Officer Career Motivation and Development", Colonel Gordon P. Masterson also noted that the kind of leader who will be able to deal with the rising costs of advanced technology and diminishing funds "must be a generalist" (11:36).

More fundamental to the argument favoring generalists is the need to understand the interaction of the total logistics system. Captain Mayo, in his thesis on logistics career progression, stated "the greatest strength [of the middle manager] will be in his ability to take the many diverse parts and incorporate them into a unified whole" (12:12). Integrating the actions and expertise of specialists is viewed as a primary responsibility of the military logistician (15:1). This responsibility can most effectively be met by someone who is familiar with, or better yet, has played the individual roles of the specialists. Some criteria for generalists, recommended by experts in the field of logistics, include experience in more than one logistics specialty, an advanced degree in logistics management, professional certification, and affiliation with a logistics oriented professional society (18:28).

The arguments favoring specialization are usually based on the difficulty of developing qualified generalists. The fact that none of the many career development proposals for cultivating broadly experienced logisticians has ever been

implemented attests to the fact that this seems to be an almost impossible task. Some of the problems associated with these plans include individual reluctance to leave one's primary career field, variation of advancement opportunities among the different logistics fields, limitation of time to accommodate movement through several logistics specialties, scarcity of funds to support frequent rotations and shortages of experienced managers within each of the logistics areas (11:13,22,24).

With the ever increasing complexity of technology, however, there are few who would argue that there is not a need for specialists. Specialization provides the military with highly competent personnel in certain fields. Two major issues in the efforts to formulate a career development plan for military logisticians have been the perplexing questions of who the specialists should be and how many are needed. The latest career development proposal recommended a goal of 20 percent of Air Force logistics officers attaining the rank of colonel to be qualified as general logisticians (13). This would leave the other 80 percent of the officers in these fields to remain as specialists. In his 1985 report on "Air Force Logisticians: Generalists or Specialists?", Lt Col Michael Zettler, expressed concern that 20 percent was too low (19:59). This may be related to the fact that Lt Col Zettler believes the true logistics specialist is the non-commissioned officer

(19:17). Thus, the need for logistics specialists within the officer ranks may not be so great as to justify the 80 percent.

While the debate goes on, the current personnel system assigns officers in the logistics areas without any formal plan to distinguish between those who will become generalists and those who will remain specialists. It was with great interest, therefore, that this research explored the results of this present non-deliberate process.

Overbey's Model of the Professional Senior Military Logistician. Captain Overbey's model of the professional senior military logistician was a crucial element of this research. This model established the measurement standard upon which the qualifications of the current Air Force senior officers in the logistics career fields were assessed. Therefore, a thorough understanding of the model is essential to the reader.

Overbey attempted to qualify the composition of the ideal military logistician during his thesis research at the Air Force Institute of Technology (AFIT) in 1985. Overbey solicited the opinions of experts in the logistics profession, using interviews and a Delphi survey, to construct a normative model of the professional senior military logistician. The topics chosen for consideration in his model were subjective, but they were based upon a comprehensive search of the literature and studied opinion

(14:58). The Delphi survey was used to confirm or negate the importance of those topics. The result was a model which consisted of "the essential qualities, characteristics and background requirements of a senior military logistician" (14:122).

Figure 1.1 illustrates the model developed by Overbey. For this research, the model was restructured as shown in Figure 1.2. The model's eight major groupings were combined into three major dimensions: (1) experience (2) education and training and (3) professional attributes. The subcomponents of the dimensions are referred to as categories. The experience dimension is comprised of assignments within various logistics arenas and the advanced positions categories. Education and training includes categories of advanced academic education, professional continuing education (PCE), and professional military education (PME). The professional attributes categories are professional involvement in logistics organizations, technical competency in various logistics disciplines, and personal qualities and characteristics regarded as essential to the military logistician. The subcomponents of the categories are referred to as the model elements. For example, commander and staff officer were elements of the advanced positions category.

Experience in the disciplines of retail, wholesale, combat and acquisition logistics were viewed by Overbey's

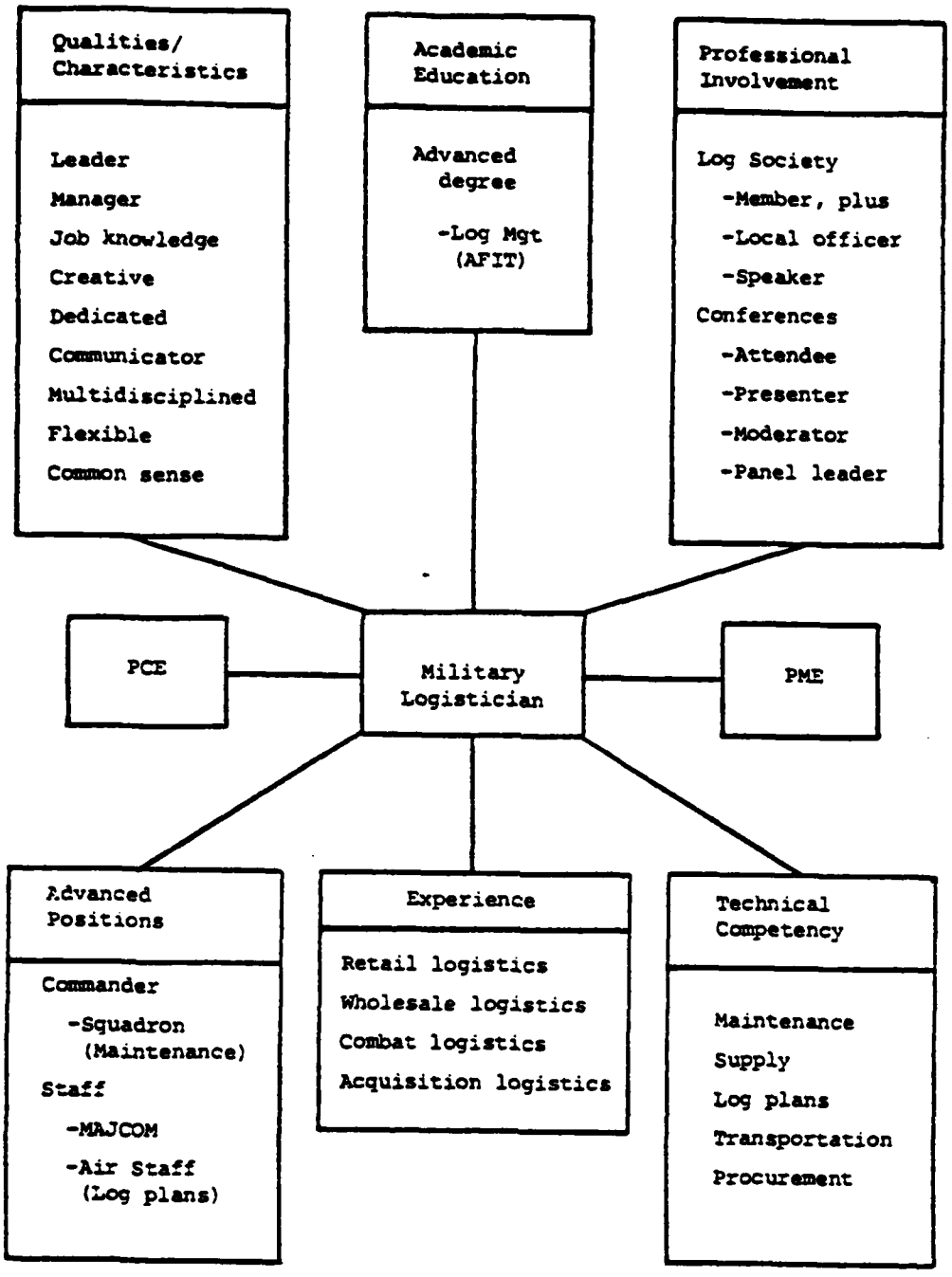


Fig. 1.1. Overbey's Model of the Professional Senior Military Logistician

DIMENSION I:
EXPERIENCE

Logistics Experience

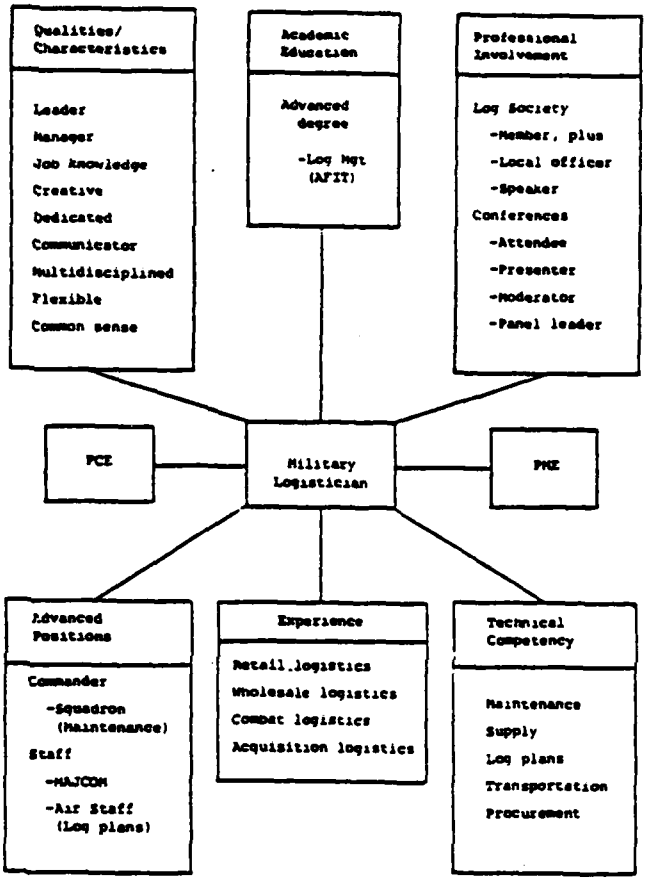
Advanced Positions

DIMENSION II:
EDUCATION/TRAINING

Advanced Academic Education

Professional Continuing Education (PCE)

Professional Military Education (PME)



DIMENSION III: PROFESSIONAL ATTRIBUTES

Professional Involvement

Technical Competency

Personal Qualities and Characteristics

Fig. 1.2. Restructure of Overbey's Model

experts as important to the military logistician. The ideal number of assignments recommended in these areas was two in retail, and one each in wholesale, combat and acquisition logistics. International logistics experience was not considered essential to the military logistician (14:118).

The experts also agreed that experience as commander in a logistics functional area was important to development of the military logistician while command experience in a non-logistics functional area was not as important. Most felt that the experience should be at the squadron level, preferably in maintenance (14:109).

Experience as a staff officer was overwhelmingly considered essential for military logisticians. This too was felt to be most valuable in a logistics functional area with logistics planning receiving the highest precedence. Major Command and Air Staff were the preferred levels for staff experience. The experts did not agree on whether staff level experience in a non-logistics functional area was important (14:109,110).

Education and training were considered to be "tne foundation from which logisticians can build their careers" (14:124). An advanced academic degree was considered important to the military logistician (14:103). A degree in logistics management was viewed as valuable in supplementing knowledge gained through actual "field" experience. Attaining this degree at AFIT was considered desirable

(14:125). Periodic attendance at PCE courses was also viewed as important to "enhance the technical competency" of military logisticians. And finally, completion of PME was viewed as important to "develop the 'whole person' concept" (14:125,126).

In the realm of professional attributes, the research revealed that the experts felt "military logisticians should be active in a professional society and should participate in logistics symposia, seminars and conferences" (14:127). This interaction allows logisticians to share their knowledge and to learn from the exchange of ideas and expertise (14:127).

The experts also agreed that technical competency in maintenance, supply, logistics planning, transportation and procurement is necessary for the military logistician. They felt that advanced education, PCE and variations in assignments were the best ways to acquire such competence (14:119).

The participants in Overbey's research all felt that there were "identifiable qualities and characteristics that distinguish successful military logisticians from unsuccessful ones" (14:116). The personal qualities and characteristics included in the model were those cited by at least half of the participants as being important to the successful military logistician. These included leadership and management ability, thorough knowledge of the job, the

ability to think and act creatively, intense devotion to duty, convincing writing and speaking ability, qualification in two or more logistics disciplines, flexibility and common sense (14:124).

Overbey assembled the results of these expert opinions to formulate his model. Through his literature review, interviews, and Delphi survey, Overbey felt that his research constituted "some of the best currently available thinking about who the military logistician should be" (14:10). That is the reason this model was chosen as the standard to assess the qualifications of today's senior Air Force military logisticians.

Current Career Development Guidance for Officers in the Logistics Career Fields. AFR 36-1, Officer Classification, and AFR 36-23, Officer Career Development, provide the current career development guidance for Air Force officers in the logistics fields. The career progression guides for maintenance, supply, transportation, acquisition contracting, and logistics plans and programs officers are contained in AFR 36-23. The career guides were reviewed to determine how well current policy addresses the criteria of the three major dimensions of Overbey's model. The following account summarizes the findings of that review.

Experience. Career progression guidance for aircraft and munitions maintenance officers states that they "are especially encouraged to broaden into other logistics

career fields" (2:108). Supply, transportation, contracting manufacturing, and logistics plans AFSCs are specifically identified as choices for such broadening. This guidance is given with the qualification that career broadening will last for a predetermined time after which the officer will return to his or her primary field. The regulation also states that maintenance officers who aspire to becoming a Director of Logistics "should attain a fully qualified AFSC in another logistics specialty" (2:110).

Guidance on career broadening for supply officers is similar to that for maintenance. Career broadening is encouraged especially for those who are "interested in advancing to top management positions" (2:137). The recommended areas of broadening include any of the other logistics AFSCs. The supply officer is encouraged to request assignments that provide both diverse experience and line and staff officer experience (2:139).

The transportation career progression guidance is less emphatic regarding career broadening. It states that "selected career specialists .... may transit into other career fields including logistics plans, supply and procurement" (2:129). Maintenance is not mentioned. The regulation does state that assignments as Director of Logistics or Deputy Commander for Resource Management are normal during the 17-20 year time frame (2:129).

Guidance for acquisition contracting/manufacturing officers recommends career broadening for "officers aspiring to high levels of grade and position" but only after a solid and varied experience is achieved in their primary field (2:142). Other logistics AFSCs specifically mentioned for career broadening are logistics plans and Director of Logistics. However, the guidance does state that any career field can be used to career broaden.

Logistics plans and programs officers are normally required to have prior experience in one of the systems and logistics utilization fields. This requirement stems from the fact that these officers are frequently required to coordinate the activities of several logistics functions (2:150). For this reason, logistics plans officers have often been thought of as the "true" Air Force logisticians. Logistics plans has traditionally been an area to career broaden into rather than out of. Therefore, there is no real substance to the career broadening guidance outlined for these officers. Assignment opportunities as Director of Logistics and Deputy Commander for Resource Management are mentioned as assignment possibilities for logistics plans officers during the 16-21 year time frame (2:152).

The career progression guidance for all of the logistics fields recommends staff level experience. In fact, it is actually identified as a specific phase in career development planning. It is interesting, however,

that only the maintenance and transportation progression guides single out command experience to produce a combined staff/command phase. The guidance for maintenance officers states that "the most highly qualified officers should command maintenance squadrons" (2:110). Likewise, the guidance for transportation officers says that "squadron commander assignments are ideal" during the 11-20 year phase (2:129).

AFR 36-1 states that full qualification in a staff officer specialty in one or more logistics career areas is mandatory for a Director of Logistics. For a Director of Resource Management, possession of a fully qualified staff officer AFSC in the logistics or comptrollers areas is listed as a requirement.

Education and Training. All Air Force officers in the logistics career fields are encouraged to complete an advanced degree. An advanced degree from AFIT is specifically encouraged in the maintenance, supply, and transportation progression guides (2:107,138,129). The guidance for supply officers states that those "interested in being assigned to the most responsible positions should apply for AFIT" (2:138). Guidance for the other logistics fields cite AFIT as a means of attaining an advanced degree, but does not specifically encourage it. AFR 36-1 cites a master's degree in logistics management as desirable for Directors of Logistics and Directors of Resource Management

(3:A5-9/10). Professional continuing education (PCE) and professional military education (PME) are also recommended in the career development guidance for all the logistics AFSCs.

Professional Attributes. The only career progression guide which addresses involvement in professional organizations is the one for logistics plans officers. It states that "officers are expected and encouraged to attend and take part in professional society meetings and symposia, as appropriate" (2:152). This guidance is provided as part of the executive or leader phase, 22 years plus.

Technical competency and personal qualities and characteristics are not directly addressed in AFR 36-23. However, technical competency and some of the personal qualities and characteristics, e.g., managerial ability, job knowledge, multidisciplined experience, usually result from following the guidance on experience and education.

Job knowledge is one area specifically addressed in AFR 36-1. It outlines the essential knowledge that officers must have for eacn logistics specialty. Many of the specialty qualifications cite knowledge of other logistics areas as either mandatory or desirable. Supply officers, for example, must have a knowledge of the "theory, fundamentals, and procedures of other areas of logistics" (3:A17-19). Knowledge of logistics planning is also listed

as desirable for supply officers. Knowledge in logistics planning techniques in the areas of supply, maintenance, transportation, and contracting are mandatory for logistics plans officers (3:A17-37). AFR 36-1 also states that the Director of Logistics must have knowledge "of supply, procurement, maintenance control, production management, and logistics planning" (3:A5-9/10). The job knowledge requirements listed in AFR 36-1 for the Director of Resource Management, however, are extremely broad and no reference is made to any of the logistics areas (3:A5-20).

This review of the regulations on career development revealed that some guidance does exist to develop qualified senior military logisticians who meet many of the criteria of Overbey's model. Experience and education and training are specifically addressed by current policy. Career broadening and staff experience are recommended for all officers in the logistics functional areas. Officers in the maintenance and supply AFSCs are specifically encouraged to seek command positions. Completion of an advanced degree, PCE and PME is also encouraged for all logistics career field officers. Although the guidance is less detailed for professional attributes, AFR 36-1 does indicate some of the qualifications required in this area.

The recent decision to advocate generalization among officers in the logistics fields as a philosophy rather than a formally implemented career development plan seems to be

congruent with current career progression guidance. Therefore, determining how well the existing system has produced qualified senior military logisticians should indicate what the qualifications of future senior Air Force military logisticians will be without implementing a formal career development plan. Thus, one intent of this research was to provide insight into the adequacy of current career progression guidance to develop qualified senior military logisticians.

Overview

The remaining chapters are focused on the task of assessing the qualifications and background of our senior military logisticians and validating Overbey's model. Chapter II outlines the four phase research design employed in accomplishing the research objectives. The findings and analysis of the data obtained from the model weighting survey and the primary survey are presented in Chapter III. Chapter IV is devoted to conclusions and recommendations resulting from this study.

II: Research Design and Methodology

The primary objective of this research was to assess the qualifications and backgrounds of senior Air Force officers currently serving in the logistics career fields by determining how well these officers "fit" a model of the professional senior military logistician developed by Captain Allan D. Overbey. A secondary objective was to survey the opinions of these same officers on the composition of the model to determine its validity.

Research Design

To accomplish the research objective, a four phase research design was employed. Phase one was the review of applicable Air Force career development literature. Phase two was the development of weightings for Overbey's model. Phase three began with the development of the data collection instrument and continued through the actual data gathering. Phase four was the actual analysis of the data. The remainder of this chapter will describe each of these four research phases in more detail.

Phase One: Literature Review

The initial research phase involved reviewing the applicable Air Force literature in the area of logistics career development. There was no lack of information on this subject. Many logistics journal articles and reports

provided insight into the debate over wnether the Air Force needs general logisticians or specialists. The debate was relevant to this research because it has been the underlying issue that has given rise to many of the past formal logistician career development proposals, as well as current career development guidance. A thorough review of Overbey's model was made to evaluate its suitability as a measurement standard for assessing the qualifications of senior military logisticians. After deciding the model's suitability for this research, it was then important to determine how well current Air Force policy guided officers in the logistics fields toward fulfillment of Overbey's model criteria. Therefore, a thorough review of the Air Force regulations on career development was made. The results of the literature review are contained in Chapter I of this thesis.

Phase Two: Developing Overbey's Model Weightings

Although comprehensive, Overbey's model did not weight any of the model dimensions or prioritize its components in any way. The researcher, however, wished to quantify the model in such a way that the relative importance of each criterion in the model could be evaluated. Therefore, this phase was devoted to developing a method to produce weightings for each of the model components. The resulting model weightings could then be used to compare the current senior military logisticians against Overbey's model by means of a "scoring" technique.

Weighting the Model. Before surveying the senior officers currently serving in the logistics fields, a weighting survey was sent to fifty individuals considered to be have a great deal of expertise in the field of logistics. These individuals were asked to weight the relative importance of each component of Overbey's model. A sample of this weighting survey is included in Appendix A.

The individuals chosen to participate in this weighting survey were recommended by Jerome G. Peppers, Jr., Professor Emeritus, AFIT, and my thesis advisor Lt Col David E. Lloyd. Professor Peppers is considered to be an expert in logistics by virtue of his 46 years experience in both the military and civilian side of the profession and his extensive and active involvement in the Society of Logistics Engineers (SOLE). Lt Col Lloyd is considered extremely knowledgeable on logistics issues and is keenly aware of experts in the field possessing an active interest in the topic of military logisticians.

Forty-one of the fifty individuals selected to participate returned the survey for a response rate of 82 percent. Two of the flag rank officer respondents were a retired army lieutenant general and a navy rear admiral. One of the retired colonels was also an army officer. Two of the respondents were senior executive service civilians.

TABLE 2.1

Categorization of Weighting Survey Participants

Status	Military			Civilian		
	0-7+	0-6	0-5	Government	Academic	Business
Active	8	3	1	2	4	2
Retired	6	14	1	-	-	-

The remaining civilians were logisticians in the academic and commercial logistics environment. An active duty lieutenant colonel was included in the group because he is the editor of a respected periodical on Air Force logistics. A categorization of the participants is shown in Table 2.1.

Overbey's model was arranged in a hierarchy for this exercise. A summary of this arrangement is illustrated in Figure 2.1. The eight components of Overbey's model were renamed categories and were combined into the three major dimensions of experience, education and training, and professional attributes. The participants were first asked to allocate 100 points among the three dimensions based on their assessment of each dimension's relative importance to the senior military logistician.

Next, the eight major categories of the model were grouped under the appropriate dimension. Then given a total of 100 points for each dimension, the participants were asked to allocate those points among the categories

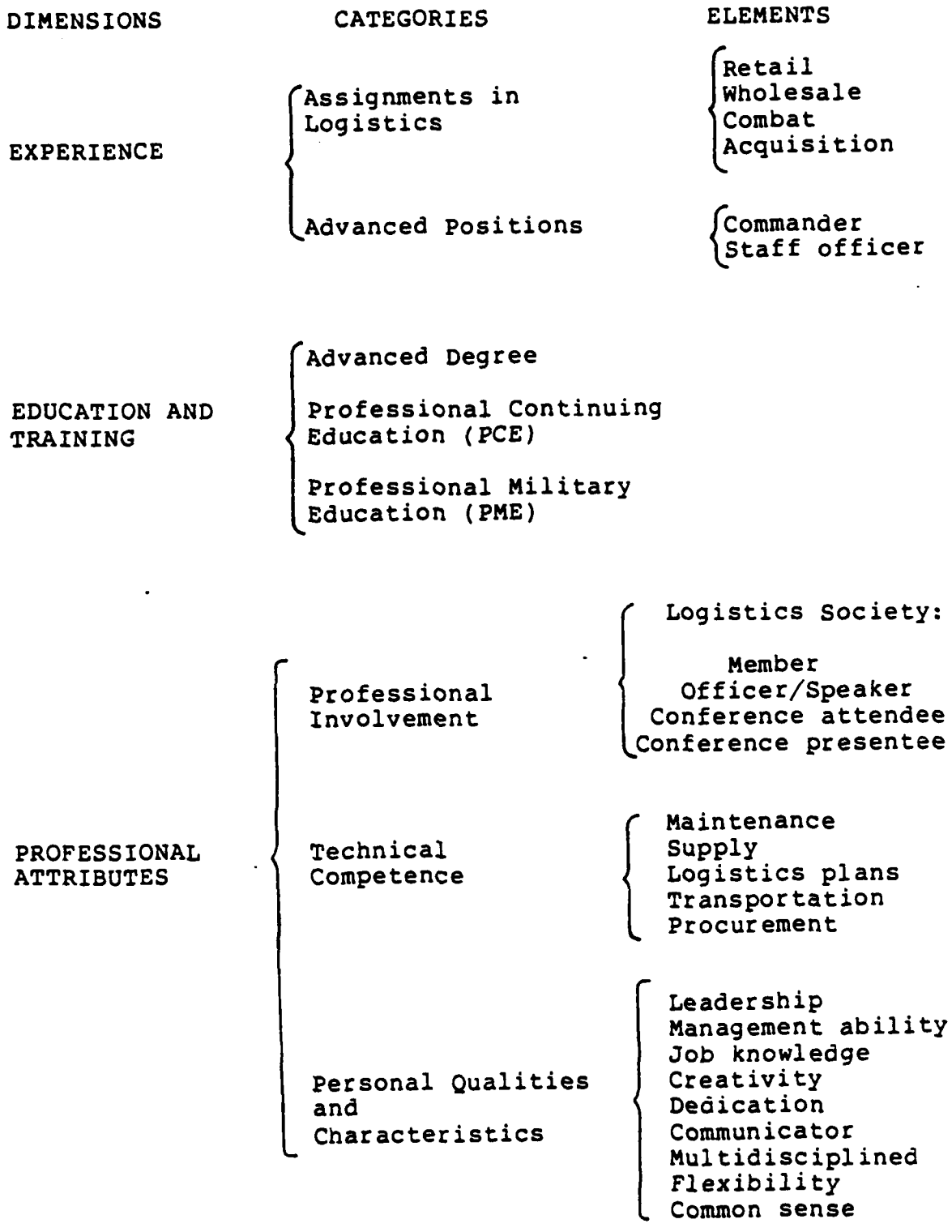


Figure 2.1. Heirarchical Arrangement Of Overbey's Model

comprising each dimension. The criterion for point allocation was again based on the category's relative contribution to that dimension.

Finally, the elements that comprise each major category were presented for evaluation. Once again the participants were asked to allocate 100 points among the elements of each category based on their relative contribution to that category.

The respondents scores for each dimension, category and element were added and divided by the total number of responses to arrive at the mean scores. The mean scores for each dimension were converted into percentages. The mean score of each category was then multiplied by the percent score of its corresponding dimension. This produced a percent score for each category. Likewise, the mean score of each element was multiplied by the percent score of its corresponding category, producing a percent score for each element. The final result was a complete weighting of each individual component of the model. An example of this method, using actual results, is presented in Chapter III.

Scoring Guidelines. The weightings assigned to the model components were used to compute a "model score" for each respondent of the primary survey. The model score had a possible range from a low of 0 through a high of 100. The model score resulted from "crediting" respondents for meeting the criteria of Overbey's model using a dichotomous

principle. This meant that a respondent either did or did not meet the criteria. For example, a senior military logistician who had 18 months in retail logistics was scored the same as one who may have had five years in retail logistics. At this point in the research no attempt was made to establish levels or degrees to which the criteria were met. However, thresholds were established in the area of technical competency and the area of personal qualities and characteristics where the respondents provided ratings on themselves.

The dichotomy method was used for two reasons. First, establishing levels to which the criteria were met would have involved additional weightings which would have been subjective on the part of the researcher. Secondly, using this method kept the scoring procedure simple.

Some scoring rules, however, were established to determine whether an individual was credited for meeting specific criteria. Following are the rules applied in scoring the individuals:

1. Assignments in logistics. Credit was given for any amount of time spent in each of the areas of retail, wholesale, combat, and acquisition logistics. Since Overbey's model did not include international logistics experience, individuals having experience in this area within AFLC were credited for wholesale logistics experience.

2. Advanced positions. Individuals were credited for command and staff experience only if such experience was in a logistics functional area. This was done because Overbey's experts felt that fulfilling advanced positions in logistics areas was much more valuable to the senior military logistician than having this experience in non logistics areas.

3. Education and training. Credit was given for any advanced degree. Although Overbey's experts felt a degree in a logistics area to be valuable, it was not considered mandatory. Respondents were credited for PME if they had completed at least two courses. Credit was given for PCE if the respondents had attended at least one course related to logistics.

4. Professional Involvement. Credit was given for membership in the Society of Logistics Engineers or any other professional logistics organization. Respondents were credited with both logistics society officer/speaker and conference presentee if they responded "yes" to question 53 of the primary survey. Respondents who indicated at least occasional attendance, or more, at logistics conferences or meetings were credited as a logistics society attendee.

5. Technical competence. Respondents were given credit for technical competence in each logistics area if they rated themselves 5 or above on the 9 point Likert scale used for these questions. A rating of 5 was considered "fairly competent".

6. Personal qualities and characteristics. The respondents were given 100 points to allocate among the personal qualities and characteristics described in Overbey's model based on the relative degree to which they possessed each of the traits. If the individual rated himself or herself at 10 or more for any quality or characteristic, he or she was credited with possessing that trait. Ten was chosen as the threshold since it represented an equal distribution of the points between the nine listed traits and the option to add an additional trait. This allowed the possibility for any individual to make a perfect score of 100 against the model. Any higher threshold would preclude this possibility.

All scoring was based on the respondents' answers to primary survey questions corresponding to each component of the model. If a respondent met the criterion, the weighting associated with that component was assigned to the individual's score. A separate score was computed for each dimension of the model to better determine the strengths and weaknesses of the population. The three "dimensional scores" could then be added to arrive at the model score. The model score was used as the basis for assessing the degree to which senior military logisticians fit Overbey's model. A model score of 100 would represent a perfect fit to the model, while a model score of 0 would mean the respondent did not meet any of the criteria of the model.

Phase Three: Data Collection Plan

The third phase involved development of a primary survey to gather background information on the experience, education and training, and professional attributes of our senior military logisticians, as well as their opinions on the composition of Overbey's model. The survey results would be used to assess the qualifications of these officers by determining how well they "fit" Overbey's model of the professional senior military logistician. An analysis of their opinions about the model criteria would be used to confirm or deny the validity of Overbey's model.

The Study Population. For the purpose of this research, the population of Air Force senior military logisticians was defined as colonels possessing either a duty, primary, or secondary Air Force Specialty Code (AFSC) in one or more of the following logistics career fields:

Director of Logistics	0046
Deputy Commander for Resource Management	0096
Aircraft and Munitions Maintenance	40XX
Transportation	60XX
Supply Management	64XX
Acquisition Contracting/Manufacturing	65XX
Logistics Plans and Programs	66XX

The duty AFSC identifies the type of position an individual is currently filling, regardless of any other AFSCs possessed. The primary AFSC represents the career field in which the officer holds the highest and most recent specialty qualification. The secondary AFSC indicates an additional specialty in which the officer may be or at one

time may have been fully qualified. Duty and secondary AFSCs were included, in addition to primary AFSCs, to assess the qualifications of officers presently serving in logistics positions and the qualifications of those who may have career broadened in the past. Including this breadth of AFSCs was aimed mainly at including rated officers in the population who had spent portions of their careers in the logistics arena.

Overbey's model was designed primarily for the Director of Logistics. The Deputy Commander for Resource Management (DCR) was included in this study because of the similarity in the responsibilities for the DCR and the Director of Logistics. All of the traditional logistics AFSCs were included because officers in these fields represent a pool from which either the Director of Logistics or the DCR are often drawn (2).

Because of the diversity expected in the population, a census was conducted to obtain the most valid representation of senior officers serving in the logistics career fields. A search of the ATLAS data base produced 986 individuals who met the requirements for inclusion in the population.

Limitations. Due to limitations in the "select" capability of the ATLAS database, the exact numbers of officers who possessed each of the AFSCs as duty, primary, or secondary could not be determined. The numbers (not names) which were obtained from the ATLAS database contained

TABLE 2.2

Estimate of the Study Population

Duty AFSC	Number of Colonels*	Approximate Percent Of Population
0046	275	34%
0096	115	14%
40XX	208	25%
60XX	38	5%
64XX	50	6%
65XX	121	15%
66XX	11	1%
Totals	818	100%

* Source: Colonels' Group HQ AFMPC

the overlap of individuals who may have possessed each AFSC in all three categories, that is, the AFSC was their duty, primary and secondary. This would cause the officer to be counted three times in the total number. Numerous other combinations of these categories within and among the AFSCs were also possible. Therefore, Table 2.2 contains an approximation of the population based on the number of individuals reported by HQ AFMPC in the duty AFSC for each career field at the time of survey distribution.

Another limitation of the study was the problem of obtaining objective data on the professional attributes of the senior officers. Self-evaluative questions were used to gather information on technical competency and personal qualities and characteristics. The assessment of the professional attributes dimension of the model, therefore, was based more on the perceptions senior officers in the

logistics fields had of themselves rather than on objective or factual information.

Survey Development. A mail survey was designed to obtain information corresponding to the three major dimensions of Overbey's model: experience, education and training, and professional attributes. This information was used to address the first two research questions on how well senior officers currently serving in the logistics career fields "fit" Overbey's model. To answer the third research question, the survey included a question to determine if the respondents' viewed themselves as general logisticians or specialists. The responses to this question were then correlated with the officers "degree of fit" to the model. In addition, the survey contained a series of questions about the model criteria which were identical to those that Overbey asked the participants in his research. Responses to these questions would provide the data necessary to answer the last research question on whether senior military logisticians agreed or disagreed with the criteria of the model. A sample of the survey is included as Appendix B.

An ATLAS listing of the population was also used to obtain data on each officer's actual assignment history, and formal education and training. This listing was used as a cross-check to insure accurate respondent self reporting. This was necessary because the survey questions required the respondents to translate detailed information on their

backgrounds into general categorizations. For example, assignments to a logistics function at base level were classified as retail logistics experience. Although the officers did not have to report every assignment at base level, they were asked to give a total number of months spent in retail logistics. Every survey was reviewed and those respondents who reported no time in any of the logistics areas were cross-checked to insure the accuracy of the information. If an individual's duty history reflected assignments to a logistics area but such was not reported on the survey, the appropriate response was entered to credit the respondent for experience in that area.

With the exception of professional involvement, the information related to professional attributes was based on the responses to self-evaluative questions. The officers were asked to rate themselves on technical competency in the individual logistics areas and on the extent to which they felt they possessed the personal qualities and characteristics included in the model.

The survey consisted of several sections. The first five questions requested demographic data to determine what logistics AFSCs the respondents possessed, their source of commission, prior enlisted service experience and whether they were rated.

The next section requested information on the respondent's experience in the areas of retail, wholesale,

combat, acquisition and international logistics. The same information was requested for staff and command experience. Definitions of the logistics areas were not provided. Rather, the respondents were given choices of common types of experience in these areas. This served to simplify the questionnaire and to steer the respondent in the direction desired. A response for "other" experience was included for each area to insure credit would be given for possibilities not listed. This section also requested the amount of time spent in each of the logistics areas. These questions proved to be very difficult for the respondents due to the possibility of overlapping answers. There was also difficulty for the respondents in distinguishing between staff and non-staff experience. The cross-checks to the ATLAS listing were necessary here to insure the reliability of the data from these questions.

Another section consisted of questions on advanced education, professional military education, professional continuing education, technical training, technical competency and professional involvement. Most of these questions required simple responses relating factual information on the topics. To measure technical competency, however, the respondents were asked to rate themselves on a 9-point Likert scale for each of the logistics areas. They were also asked to provide the means through which they acquired their competence. Specific means for achieving

technical competence were given as choices, but the opportunity to provide other means was provided.

One section was devoted to some of the same questions Overbey asked the participants in his research. In the interest of keeping the survey to a reasonable length, not all of Overbey's questions were used. The questions chosen were those related to the major topics of advanced education, professional involvement, command and staff experience, multidisciplined experience, technical competence, assignments in the different logistics areas, and personal qualities and characteristics. These questions were used to make a fair comparison between the opinions of Overbey's experts and those of the population under study regarding the criteria of the model.

Additional questions were included in the survey to determine whether senior Air Force officers in the logistics fields view themselves as generalists or specialists and whether they consider depth or breadth of experience to be more important to the military logistician. Questions were also asked to determine what aspects of their background best prepared them for their logistics position and if professional military education was a valuable source of education in the area of logistics.

The final section of the survey dealt solely with the personal qualities and characteristics included in Overbey's model. Overbey requested his participants to identify the

traits most vital to a successful senior military logistician. Those traits mentioned by more than half of his respondents were included in the final model. The respondents in this study were asked to assess themselves on the relative degree to which they possessed each of the qualities. To do so they were asked to distribute 100 points among the nine traits identified. The option was given for the respondents to use zeros and to add a trait not already on the list, if they wished. The respondents were then asked to repeat the same exercise to assess the relative degree of importance of each of the traits to the professional military logistician. Finally, the respondents were asked to provide their duty title, their duty and primary AFSCs, and the major command in which they had spent the majority of their time.

The respondents were asked to code their responses using an optical scanning answer sheet. While this was designed to minimize data coding, thereby insuring data accuracy, many of the returned answer sheets could not be read by the optical reader. To insure the accuracy and completeness of the data, an extensive effort was required by the researcher to go over approximately 350 of the returned questionnaires and darken the entries on the optical scanning sheet.

The last section on the self-assessment of personal qualities and characteristics was answered directly on the

questionnaire. This data was manually entered into a data file.

The Survey Pretest and Approval. As a pretest, the survey was given to fourteen officers known to possess at least one of the logistics AFSCs. One of the participants selected was a colonel, eleven were lieutenant colonels and two were majors. Ten of the participants were faculty members of the AFIT School of Systems and Logistics and the remaining four were in key logistics positions in wing organizations at Wright Patterson Air Force Base or at Air Force Logistics Command (AFLC) Headquarters. In addition to completing the survey, the pretest participants were asked to report the time required to complete the survey. Participants were also asked if they would complete the survey if they had received it in the mail under actual circumstances. Additional comments about the survey were also solicited.

Twelve of the fourteen pretest participants completed the survey. All indicated that they would have completed it if it had been received in the mail under normal circumstances. The average reported time to complete the survey and code the optical scanning answer sneet was approximately 42 minutes. The length of the survey, therefore, was determined acceptable by the researcher and her committee.

Only one of the participants cited questions 13-34 as difficult to answer. These were the questions requiring the respondents to report the amount of time (months) they had spent in each of the logistics areas in both staff and non-staff positions. The questions were not revised because the majority of the pretest participants reported no problems in this area. These questions, however, did present problems for the study population. This is the area where extensive cross checking was required with the actual duty history listing. Perhaps the comment by the one pretest participant should have been examined more closely in view of the fact that it was made by the only colonel in the pretest group.

Many helpful comments were made on the format of the questionnaire. All the Likert-type scales were arranged in ascending order and some of the wording was changed in both the instructions and questions. Several of the participants asked for definitions of such things as retail and wholesale experience and technical competency, but it was decided not to include definitions in the survey. This was done to keep the length of the survey reasonable and because the researcher felt the choices provided for the questions led the reader in the desired direction. Also, since there are no standard definitions for tnese terms, the researcher did not want to include definitions that might alienate or confuse the respondents. Only a few of the respondents to the actual survey had problems with these terms.

Only one question was eliminated from the survey as a result of the pretest. The question asked if the respondent agreed that "of the logistics functional areas, maintenance, supply, and transportation, experience as a maintenance squadron commander was the most beneficial to a military logistician". The strong reaction that this question elicited from one of the participants led the researcher to believe that non-maintenance officers might take offense to the question. Although the question was one that Overbey had used in his research, it was decided to exclude it from the final survey format.

The revised survey was forwarded to the military personnel center (HQ AFMPC/DPMYOS) for approval. After four weeks, conditional approval was received pending a minor change to two questions. The changes involved providing multiple choice responses for the questions on professional continuing education and technical training courses completed. The original survey allowed for open ended responses to these questions. The survey was assigned USAF Survey Control Number (SCN) 86-62.

Phase Four: Data Analysis

The final phase involved actually analyzing the data received from the primary surveys sent to the senior military logisticians. The data analysis plan was tailored to answering each research question. The SPSSx software package was used for all statistical analyses of the data

performed during this phase (16). A copy of the basic program used for analyzing the data is included in Appendix C.

Demographics. The data were analyzed to determine the demographics of the officers represented in the study and to insure the sample was representative of the population. The particular areas of interest included the number of officers who possessed each of the AFSCs under study, the combinations of these AFSCs, source of commission, prior enlisted service experience, major command orientation and aeronautical rating.

The population was divided into rated and non-rated officers for the analyses of research questions 1, 2 and 4. The researcher felt that such a breakdown was necessary to distinguish non-rated officers who had been in the logistics career fields for almost their entire careers from rated officers who had spent the majority of their careers outside the logistics field, but who had career broadened into logistics. For this reason, the non-rated officers were combined under the term "career logisticians" and rated officers were combined under the term "non-career logisticians". The analysis refers to the differences between rated and non-rated officers in this way.

Research Question 1: Measuring the Respondents Against Overbey's Model. A model score, three dimensional scores and eight category scores were computed for each respondent based on the survey responses. Frequencies were calculated

on all of the model elements. The resulting scores and element percentages provided an overall description of the study population's qualifications and background. The scores and percentages were further analyzed by career and non-career logistician status.

Research Question 2: Score Variations Among the AFSC Groups. The mean model and mean dimensional scores of career and non career logisticians were compared to determine if there were any significant differences in the degree of fit to Overbey's model between these two groups. The duty and primary AFSC groups were then divided by logistician career status and mean model and dimensional scores were computed for each group. The scores of these subgroups were also compared for significant differences in the degree of fit to the model. A one way analysis of variance was performed using the mean model scores and the mean dimensional scores of each group to determine if they were significantly different. If a significant difference was found a Scheffe test was used to further analyze the differences between various combinations of the groups.

Research Question 3: Generalists vs Specialists. Frequencies were calculated on the number of officers who agreed or disagreed with question 66 which asked whether they considered themselves to be generalists rather than specialists in one logistics function. The agreement or disagreement on this question was correlated with the model

scores of the officers to determine if their views of themselves as generalists were related to their degree of fit to Overbey's model. The officers were categorized as generalist or specialists based on their responses to question 66 and as high or low scorers based on their model scores. An officer who achieved an model score above the population mean was classified as a high scorer. One who scored below the mean was classified as a low scorer. A contingency table was then set up and the Chi square statistic computed to test the null hypothesis. The null hypothesis stated that no relationship existed between the respondents' views of themselves as generalists or specialists and their model scores. If the null hypothesis was rejected, a contingency coefficient would be computed to determine the magnitude of the association between the views and the scores.

Research Question 4: Validating Overbey's Model. To determine whether current senior military logisticians agreed with the criteria of model, the mean ratings for questions replicated from Overbey's research were compared to the mean ratings of Overbey's participants. A statistical t test was performed for each question to determine if there was a significant difference between the opinions of the two groups about the composition of the model. The results of this analysis would either validate or deny the acceptance of Overbey's model by senior members of the Air Force logistics community.

Summary

This chapter provided a review of the research design used to assess the qualifications and backgrounds of senior officers currently serving in the logistics career fields and to survey their opinions on Overbey's model of the professional senior military logistician. Details of the four research phases were outlined. A weighting survey, used to weight Overbey's model, and guidelines developed to use the weightings in measuring the senior officers against the model were described. The primary survey used to gather background information on the senior officers was thoroughly discussed, along with the results of the survey pretest and the terms of survey approval. The data analysis plan was constructed to address each of the research questions. Chapter III contains the findings and analysis of data obtained from the weighting survey and the primary survey.

III. Findings and Analysis

This research was conducted to assess the qualifications and background of senior Air Force officers (colonels) currently assigned to the logistics career fields by measuring them against Overbey's model of the professional senior military logistician. A secondary objective of this study was to survey the opinions of these same officers on the characteristics, qualifications, and background requirements which comprise the model. The research plan included two surveys. The primary survey was sent to 986 colonels possessing an AFSC in one or more of the logistics functional areas. A weighting survey was sent to active duty and retired senior military logisticians, as well as prominent civilians in military, business and academic logistics circles. This chapter outlines the results of the investigation beginning with the weighting survey and followed by the data obtained from the primary survey. When appropriate, tables are used to consolidate or clarify the information.

Weighting Survey Results

The purpose of the weighting survey was to obtain weightings for each of the criteria outlined in Overbey's model. The results of this survey are presented first because these weightings were later used to score the

TABLE 3.1

Model Dimension Mean Ratings

	Mean	Std. Dev.	Range
EXPERIENCE	39.8	13.4	15-80
EDUCATION AND TRAINING	24.2	8.5	10-40
PROFESSIONAL ATTRIBUTES	36.0	11.3	10-51
TOTAL	100.0		

respondents of the primary survey. The scores would indicate how well each respondent "measured up" to the ideal represented by Overbey's model.

Forty-one of the fifty mailed weighting surveys were returned for a response rate of eighty-two percent. The respondents offered many comments and it appeared that a great deal of thought had gone into most responses. One general officer participant even conducted a mini-survey of six acquisition and operational logisticians assigned to his command before submitting his input.

The respondents were asked to allocate 100 points among the model dimensions, categories and elements. The mean scores, standard deviations and ranges for each of these model components were then calculated. This information for the model dimensions, categories and elements is presented in Tables 3.1, 3.2 and 3.3 respectively.

TABLE 3.2

Model Category Mean Ratings

	Mean	Std. Dev.	Range
EXPERIENCE			
Assignments within logistics arenas	57.3	13.9	25-99
Advanced position as commander and staff officer	42.7	13.9	1-75
TOTAL	100.0		
EDUCATION AND TRAINING			
Advanced degree	39.1	12.1	10-60
PCE	30.2	9.4	10-60
PME	30.6	10.5	15-60
TOTAL	100.0		
PROFESSIONAL ATTRIBUTES			
Professional involvement	17.3	8.4	1-50
Technical competency	42.8	10.7	25-70
Personal qualities and characteristics	39.9	11.8	15-60
TOTAL	100.0		

TABLE 3.3

Model Element Mean Ratings

	Mean	Std Dev	Range
ASSIGNMENTS WITHIN LOGISTICS			
Retail	23.5	12.4	0-50
Wholesale	25.4	14.0	5-100
Combat	23.9	11.5	0-50
Acquisition	27.2	12.4	0-55
TOTAL	100.0		
ADVANCED POSITIONS			
Commander	53.2	17.0	0-80
Staff officer	46.8	17.0	20-100
TOTAL	100.0		
TECHNICAL COMPETENCY			
Maintenance	25.4	9.3	10-50
Supply	20.9	5.7	10-40
Logistics plans	21.5	7.9	5-35
Transportation	13.3	6.2	5-30
Procurement	18.8	7.9	5-40
TOTAL	100.0		
PROFESSIONAL INVOLVEMENT			
Society member	27.7	18.5	5-100
Society officer	25.3	8.1	0-45
Conference attendee	16.4	6.6	0-30
Conference presentee	30.6	12.2	0-50
TOTAL	100.0		
QUALITIES/CHARACTERISTICS			
Leadership	18.4	15.7	0-80
Managerial ability	12.0	5.6	0-20
Job knowledge	13.2	8.2	0-49
Creativity	8.4	5.7	0-30
Dedication	8.5	5.7	0-25
Communicative skills	9.4	5.5	0-25
Multidisciplined	10.3	6.9	0-30
Flexibility	7.3	4.4	0-20
Common sense	12.5	8.7	0-51
TOTAL	100.0		

Multiplying the mean score of every component by the percentage score of the dimension or category to which it belonged produced the final model weightings. For example, the dimensional score for experience (39.8) was converted to a percentage (.398). Then, the mean score for advanced positions (42.7), a category of the experience dimension, was multiplied by .398. This produced a weighting of 17.0 percent for advanced positions. To determine the weightings for commander and staff officer positions (both elements of the advanced positions category), the mean score for commander (53.2) and the mean score for staff officer (46.8) were each multiplied by .17 (the percentage score of advanced positions). This produced a weighting of 9.0 percent for commander and 8.0 percent for staff officer. Note that 8 percent + 9 percent = 17.0 percent. Hence, the sum of the element weightings will be equal to the overall weighting of the category to which they belong. Likewise, the sum of the category weightings will be equal to the overall weighting of the dimension to which they belong. The resultant weightings for each dimension, category and element are summarized in Tables 3.4, 3.5 and 3.6, respectively. The results of each dimension will be further discussed along with its appropriate subcomponents.

Dimension I: Experience. Experience was weighted as the most valuable aspect of the model with a mean score of 39.8 percent. It was evident from the comments received,

TABLE 3.4

Model Dimension Weightings

EXPERIENCE	39.8%
EDUCATION AND TRAINING	24.2%
PROFESSIONAL ATTRIBUTES	36.0%
TOTAL	100.0%

TABLE 3.5

Model Category Weightings

	Assignments within logistics arenas		22.8%
EXPERIENCE 39.8%	Advanced position as commander and staff officer		17.0%
		TOTAL	39.8%
	Advanced degree		9.5%
EDUCATION AND TRAINING 24.2%	PCE		7.3%
	PME		7.4%
		TOTAL	24.2%
	Professional involvement		6.2%
PROFESSIONAL ATTRIBUTES 36.0%	Technical competency		15.4%
	Personal qualities and characteristics		14.4%
		TOTAL	36.0%

TABLE 3.6

Model Element Weightings

ASSIGNMENTS IN LOGISTICS 22.8%	Retail	5.3%
	Wholesale	5.8%
	Combat	5.5%
	Acquisition	6.2%
	TOTAL	22.8%
ADVANCED POSITIONS 17.0%	Commander	9.0%
	Staff officer	8.0%
	TOTAL	17.0%
EDUCATION AND TRAINING 24.2%	Advanced Degree	9.5%
	PCE	7.3%
	PME	7.4%
	TOTAL	24.2%
TECHNICAL COMPETENCY 15.4%	Maintenance	3.9%
	Supply	3.2%
	Logistics plans	3.3%
	Transportation	2.1%
	Procurement	2.9%
	TOTAL	15.4%
PROFESSIONAL INVOLVEMENT 6.2%	Society member	1.7%
	Society officer	1.6%
	Conference attendee	1.0%
	Conference presentee	1.9%
	TOTAL	6.2%
QUALITIES/CHARACTERISTICS 14.4%	Leadership	2.6%
	Managerial ability	1.7%
	Job knowledge	1.9%
	Creativity	1.2%
	Dedication	1.2%
	Communicative skills	1.3%
	Multidisciplined	1.5%
	Flexibility	1.0%
	Common sense	1.8%
	TOTAL	14.4%

as well as the ratings, that experience was viewed as most important to the senior military logistician. Several of the respondents made very similar comments, such as "experience is the best teacher" and "there is no substitute for experience" and "experience makes the senior military logistician". Others observed that experience was the means through which other components of the model (e.g.,technical competency) could be achieved.

Under experience, assignments in the logistics areas were weighted higher than advanced positions as a commander or staff officer. This indicated that the respondents felt the senior military logistician would benefit more from actual experience in the logistics arenas than from staff or command assignments. However, advanced positions were still weighted fairly high, meaning that experience in these areas was also considered desirable for the senior military logistician. One respondent pointed out that in practice, both the assignments to a logistics area and a staff or command position could be fulfilled simultaneously. An example of this would be a Deputy Commander for Maintenance who would be fulfilling a retail logistics assignment as well as a wing staff and a command assignment. In fact, senior officer respondents to the primary survey who fell into such situations were given credit for two or three of these criteria as long as their experience was in a logistics functional area. Overbey's research indicated,

however, that the preferred level of staff experience was at Major Command or Air Staff and that command experience was mostly favored at the squadron level (14:109,110).

Acquisition logistics experience received the highest weighting among the logistics arenas. The current emphasis on making logistics an integral part of major weapons system acquisitions may have manifested itself in this weighting. Wholesale logistics was viewed as the second most important area of logistics in which the senior military logistician should have experience. Combat logistics was third and retail logistics was last.

Under advanced positions, command positions rated slightly higher than staff. Overbey's participants, however, agreed more strongly that staff level experience was necessary for the senior military logistician than command experience (14:95). The importance of command positions to the respondents in this research may be related to the emphasis they placed on leadership, which was weighted the highest of the personal qualities and characteristics.

Dimension II: Education and Training. This dimension was rated the least important of the three with a mean weighting of 24.2 percent. Two respondents remarked that education was necessary mostly for promotion purposes. An advanced degree was seen as more important than PME or PCE. The weightings between PME and PCE were very close, with PME weighted slightly higher.

Dimension III: Professional Attributes. Although experience was viewed as the most important dimension of the model, professional attributes was weighted a close second at 36.0 percent. Professional involvement was not considered as important to this dimension as technical competency or personal qualities and characteristics. Of all the professional involvement activities, being a logistics society conference presenter/moderator or panel leader was viewed as most desirable followed closely by membership in a logistics society. Being an officer or speaker in a logistics society was not considered more beneficial than just being a member. Merely attending logistics society conferences was seen as the least important means of professional involvement.

Technical competency was given the highest weighting under professional attributes. This may be due to a "means end" relationship between experience and technical competency. That is, experience was considered the best way to gain technical competence. Thus, in view of the importance placed on experience, it is not surprising that technical competency would be also be weighted highly.

Technical competence in maintenance was rated most beneficial to the senior military logistician. Maintenance was also the area in which Overbey's respondents had the highest agreement on technical competency. Perhaps maintenance is viewed as the most valuable area because

maintenance, by its very nature, is most impacted by the other logistics functions. All the logistics disciplines support sortie generation and most of that support either flows through or exists because of maintenance.

Logistics planning was weighted as the second most important area in which the military logistician should be technically competent. Logistics planning is another area of logistics that ties the whole logistics process together. Therefore, the placement of its importance is not surprising.

Supply was weighted a close third to logistics planning in the area of technical competence. Procurement was rated fourth and transportation last. It appears the more removed the logistics functional area is from actual sortie production, the less its perceived importance.

Personal qualities and characteristics were weighted second in importance under professional attributes and only slightly less than technical competency. This seems to indicate that the success of a senior military logistician will rely heavily on the personal qualifications of the individual, regardless of the experience or education and training he or she may have. One respondent alluded to this fact when he stated "the primary measure of professional merit is performance....performance is measured on the factors listed under qualities and characteristics and technical competency".

Leadership was clearly seen as the most important personal quality the senior military logistician should possess. It was rated well above any of the other qualities listed. Job knowledge was weighted next in importance. These two qualities were also the two most frequent responses given by the participants of Overbey's research when he asked them to identify qualities the senior military logistician should possess.

Common sense was rated third in importance followed closely by managerial ability in fourth. Being multidisciplined was fifth in importance. Creativity and dedication were seen as equally important after that. Flexibility was weighted the least important of all the personal qualities and characteristics.

The results of the weighting survey indicated some components of Overbey's model were considered more important to the development of the senior military logistician than others. Experience was viewed by the survey participants as the most important dimension of the model followed closely by professional attributes. Education and training was perceived as less important than either of these other two dimensions. Experience in a variety of logistics arenas was considered more valuable than serving in advanced positions as a commander or staff officer. An advanced degree was viewed as the most important aspect of education and training, while less emphasis was placed on completion of

PME and PCE. Technical competency was rated highest in importance under the professional attributes dimension. Personal qualities and characteristics was next in importance in this dimension while the least consideration was given to professional involvement.

Primary Survey Results

Having quantified the components of Overbey's model, the primary survey data could now be analyzed. A total of 671 surveys out of 986 were returned for a response rate of 68 percent. Due to limitations in the select capability of the ATLAS data base, the exact numbers of officers possessing each of the AFSCs included in the research were unknown before the surveys were sent. There was every reason to believe, however, that the respondents represented the population under study. Each AFSC group seemed to be adequately represented. This conclusion was based on the large number of respondents and also a comparison of their AFSC distribution with an approximate population distribution provided by HQ AFMPC.

Demographics. The respondents were closely divided between rated and non rated officers. As stated previously, non rated officers were combined under the term "career logisticians" while rated officers were termed "non career logisticians". This was done to distinguish non rated officers who had been in the logistics career fields for

TABLE 3.7

Tabulation of Duty, Primary and Awarded AFSCs in Population and Percentages of Non Career Logisticians

AFSC	Total Duty	% Duty Non Career Logisticians	Total Primary	% Primary Non Career Logisticians	Total Awarded
40XX	150	43%	128	49%	317
60XX	37	16%	25	20%	77
64XX	43	9%	31	19%	133
65XX	61	33%	64	34%	79
66XX	9	22%	7	43%	140
0046	162	33%	204	41%	307
0096	67	64%	94	60%	160
Other	142	77%	118	53%	-
Total	671	45%	671	45%	1213

almost their entire careers from rated officers who had spent the majority of their careers outside the logistics field.

Approximately 55 percent of the respondents were career logisticians and approximately 45 percent were non career logisticians. The percent of non career logisticians in each of the duty and primary AFSCs is shown in Table 3.7, along with the total number of respondents possessing each AFSC as either a duty or primary. The number of respondents who had been awarded the AFSC at some time during their career is also reported in Table 3.7. Approximately 77 percent of the respondents who reported a duty AFSC in other than the logistics career fields were non career logisticians. In the primary AFSC category, about 53

percent of the other AFSCs were non career. Twenty six respondents did not report their primary AFSC and six did not report their duty AFSC.

Question 1 of the primary survey asked the respondents to indicate each of the logistics AFSCs they had been awarded during their careers. The awarded AFSCs represent the AFSCs reported by the respondents in answering this question. Because approximately 57 percent of the respondents possessed two or more of the AFSCs listed, the total number in the awarded column exceeds the number of respondents. These AFSCs occurred in forty-nine different combinations. The most prevalent combinations were 40XX/0046 (16 percent), 40XX/66XX/0046 (5.5 percent), 64XX/0096 (3.1 percent) and 64XX/66XX/0046 (2.8 percent). Six individuals each possessed a combination of five different AFSCs.

Slightly over fifty percent of the officers did not have a single major command orientation, that is, there was no one major command in which they had spent 40 percent or more of their career. For those who did have a single major command orientation, Strategic Air Command and Military Airlift Command careerists predominated with 18.6 percent and 13.1 percent respectively. Six percent reported Tactical Air Command and approximately 4 percent each reported Air Force Logistics Command and Air Force Systems Command as the major command in which they spent the

majority of their careers. Air Training Command was claimed by 2.4 percent of the respondents.

Not surprisingly, most of the respondents received their commissions from either ROTC (48.8 percent) or OTS (37.9 percent). The remaining officers were either commissioned through the Air Force Academy or some other source. Sixteen percent of the officers had prior service enlisted experience and of those approximately 30 percent had served their enlisted time in a logistics functional area.

Answering the Research Questions. Four research questions were posed to meet the objectives of this study. The following information provides the analyses and findings for each of these questions.

Research Question 1. How well do officers currently serving in the logistics career fields fit Overbey's model of the professional senior military logistician? To what degree do they meet the criteria? In what areas are their strengths and weaknesses?

The respondents to the primary survey were measured against Overbey's model based on the weightings from the weighting survey results previously described. The respondents were credited for meeting the criteria of the model based on the responses to questions concerning their qualifications and background. A total "model score" was computed for each respondent. A model score of 100 would

represent a "perfect fit", meaning that an individual met all the criteria identified in Overbey's model. The model score was then broken into three separate scores corresponding to each dimension of the model. These were the "experience score", the "education/training score", and the "professional attributes score". The dimensional scores, along with category scores and frequencies of the elemental scores, were used to determine the degree to which the respondents met the criteria and to determine the areas of their strengths and weaknesses. All of the scores were first analyzed for the population as a whole and then according to logistics career status.

A summary of the model scores is presented in Table 3.8. All scores have been rounded to the nearest tenth of a point. The mean score for the population was 65.8. The mean score for career logisticians, 70.4, was over ten points higher than for non career logisticians. Although 671 surveys were returned, the model score was computed for only 660 cases because 11 respondents did not answer the questions related to personal qualities and characteristics. This prevented computation of a complete model score for these individuals. However, dimensional scores for experience and education and training were computed for all respondents.

TABLE 3.8

Model Scores

	Mean	Std. Dev.	Median	No. Cases
Population	65.8	12.8	65.3	660
Career Logisticians (CL)	70.4	11.4	69.8	366
Non Career Logisticians (NCL)	60.0	12.2	60.3	294

Figure 3.1 is a graphical representation of the distribution of the model scores among the population and the two groups of logisticians. The model scores ranged from a low of 24.5 to a high of 100. For career logisticians, the scores ranged from 36.3 to 100. Non career logisticians scored between 24.5 and 93.0. The scores appear close to being normally distributed. Only one individual, a career logistician, made a perfect score. Twelve individuals scored above 91.4, which represented two standard deviations above the mean. Of these twelve, three were non career logisticians. On the other hand, 14 non career logisticians and two career logisticians scored more than two standard deviations below the mean. Two non career logisticians scored more than three standard deviations below the mean.

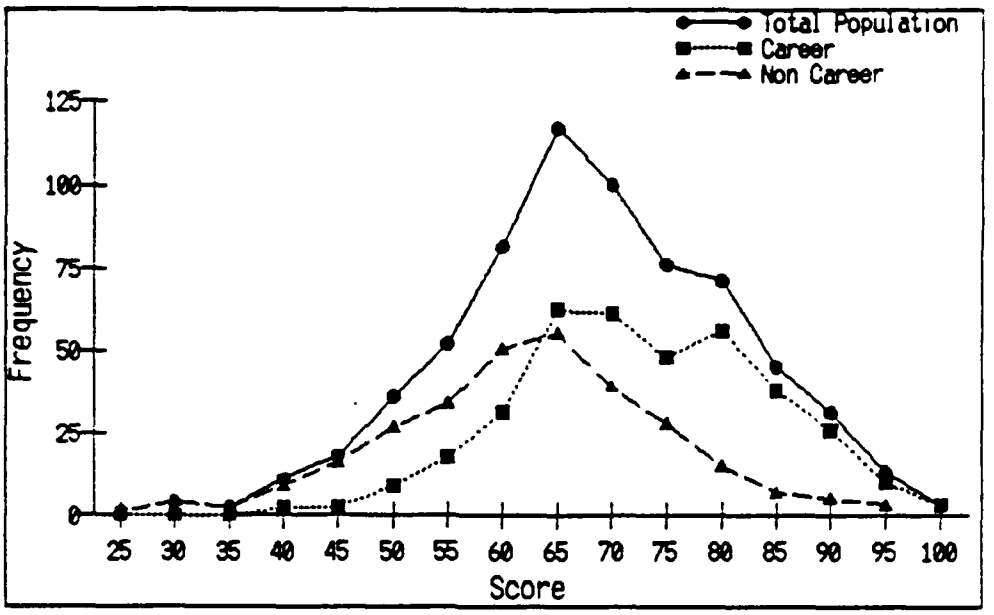


Fig. 3.1. Distribution of Model Scores Among the Population, Career Logisticians, and Non Career Logisticians

The model scores were broken into three separate scores for each dimension of the model. The dimensional scores for the population and logistician groups are presented in Table 3.9. The highest possible dimensional scores were 39.8 for experience, 24.2 for education/training, and 36.0 for professional attributes. The mean scores for career logisticians exceeded the non career logisticians in each dimension. Figure 3.2, 3.3 and 3.4 represent the distribution of experience, education/training and professional attributes scores, respectively for the population and logistician groups.

The dimensional scores for experience ranged from 0 to 39.8 for the population. Ninety-five logisticians (14.1 percent), had perfect scores for experience. Of these, 81

TABLE 3.9

Model Dimension Scores

	Mean	Std. Dev.	Median	No. Cases
Experience	39.8*			
Population	28.1	7.7	27.8	671
Career Logisticians	30.8	6.9	30.8	369
Non Career Logisticians	24.7	7.2	22.5	302
Education and Training	24.2*			
Population	18.1	5.6	16.9	671
Career Logisticians	19.1	5.2	16.9	369
Non Career Logisticians	16.9	5.8	16.9	302
Professional Attributes	36.0*			
Population	19.6	5.9	19.5	660
Career Logisticians	20.6	5.6	20.8	366
Non Career Logisticians	18.4	6.0	17.8	294

* Represents the highest possible dimensional score

were career and 14 were non career logisticians. The most prevalent score (the mode) was 27.8 which represented individuals with a combination of experience in retail and combat logistics, as well as staff and command. This score was achieved by 15.6 percent of the respondents.

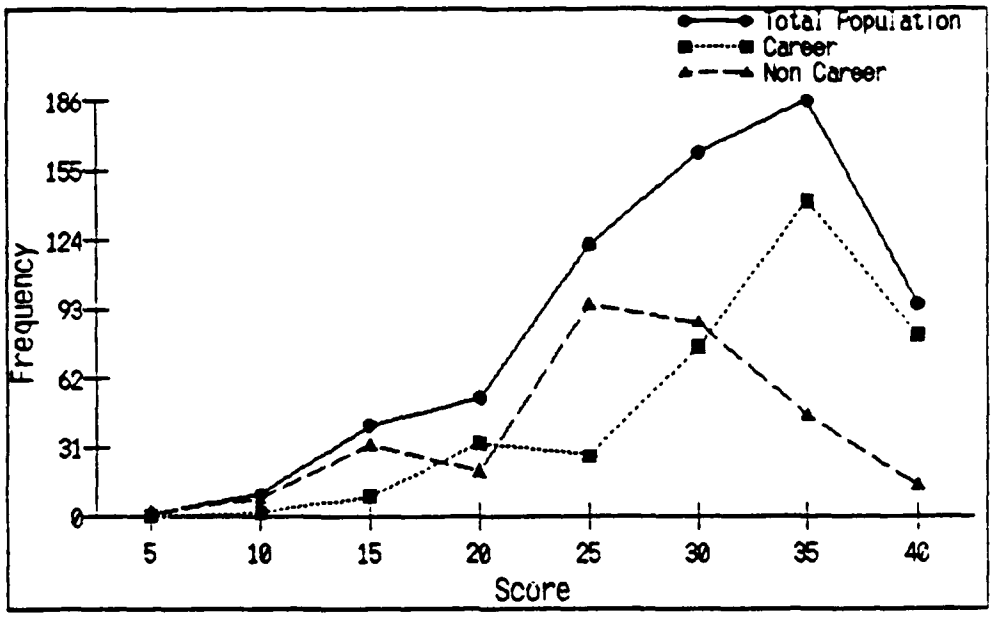


Fig. 3.2. Distribution of Experience Scores Among Population, Career Logisticians and Non Career Logisticians

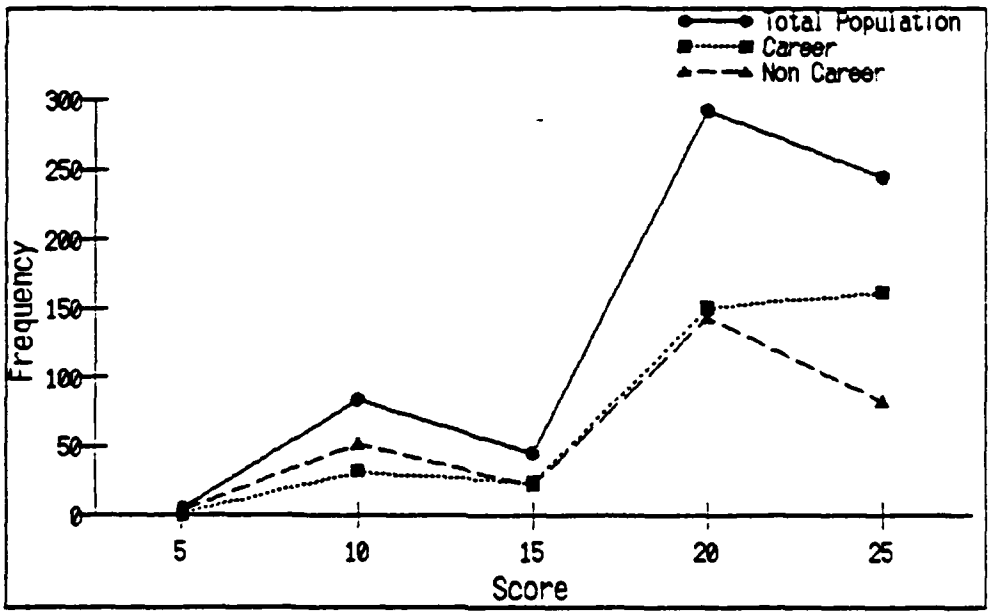


Fig. 3.3 Distribution of Education and Training Scores Among Population, Career Logisticians and Non Career Logisticians

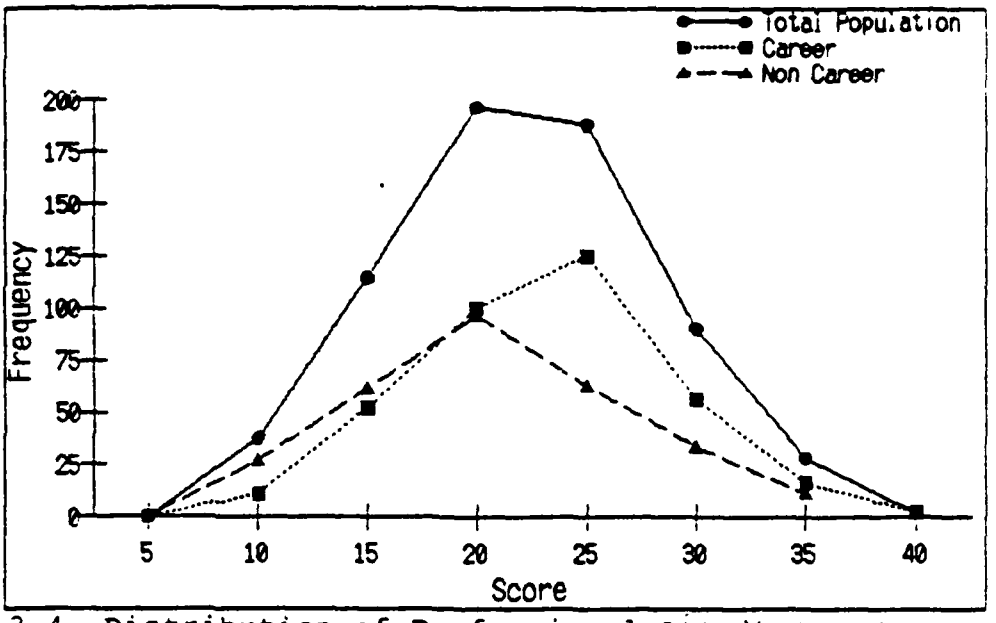


Fig. 3.4. Distribution of Professional Attributes Scores Among Population, Career Logisticians and Non Career Logisticians

The education and training scores ranged from 0 to 24.2. Four individuals, one career and three non career logisticians, scored zero. Two hundred and forty-five respondents (36.5 percent) had perfect scores of 24.2. For the career logisticians, 43.9 percent achieved perfect education/training scores. For non career logisticians, 27.5 percent achieved a perfect score. Another 43.7 percent of the respondents scored 16.9 (the mode), which represented completion of an advanced degree and PME, but no PCE.

The variety of scores for professional attributes was much larger than the other dimensions because this dimension contained more elements than the others. The lowest score in professional attributes for the population was 5.8. Two individuals, both career logisticians, achieved perfect scores of 36.0. The mode was 16.8, however, only 11

respondents attained this score. The median score was 19.6. Twenty respondents scored more than two standard deviations above the mean score, while six scored less than two standard deviations below the mean. The category scores and element frequencies provide a more detailed analysis of this dimension.

Category scores were also calculated to provide more insight into the dimensional scores. The categories and elements for the education and training dimension were the same, so no category score was required. The category scores are presented in Table 3.10. The category scores ranged from 0 to their maximum values, with the exception of qualities and characteristics. The the lowest score for that category was 2.6. In the logistics assignments category 147 (21.9 percent) individuals had perfect scores of 22.8. Of these, 21 were non career logisticians. Seventy percent of the population had a perfect 17.0 for advanced positions; 18.6 percent had perfect scores for professional involvement; 9.4 percent scored perfectly in technical competency; and 5.4 percent were perfect scorers in qualities and characteristics. Career logisticians scored higher in all categories except advanced positions. This was due to the larger percentage of non career logisticians who had held commander positions.

Score frequencies, rather than actual scores, were used to describe the model elements because only two scores

TABLE 3.10
Model Category Scores

	Mean	Std. Dev.	Median	No. Cases
Assignments in Logistics	22.8*			
Population	13.9	6.2	12.0	671
Career Logisticians	16.7	5.3	16.6	369
Non Career Logisticians	10.4	5.7	10.8	302
Advanced Positions	17.0*			
Population	14.2	4.4	17.0	671
Career Logisticians	14.1	4.3	17.0	369
Non Career Logisticians	14.2	5.7	17.0	302
Professional Involvement	6.2*			
Population	2.3	2.4	1.7	671
Career Logisticians	3.0	2.5	2.7	369
Non Career Logisticians	1.6	2.0	1.0	302
Technical Competency	15.4*			
Population	7.1	4.3	6.8	671
Career Logisticians	7.3	4.0	6.5	369
Non Career Logisticians	6.9	4.7	6.8	302
Qualities and Characteristics	14.4*			
Population	10.1	2.5	10.4	671
Career Logisticians	10.3	2.5	10.6	369
Non Career Logisticians	9.8	2.6	10.1	302

* Represents the highest possible category score

were possible for each element. If the respondents did not meet an element criteria, they received a score of 0 for that element. On the other hand, if they did meet the criteria, they received a score equal to the weighting of that element. Table 3.11 represents the percentage of respondents who met the criteria for each model element. Additional details on the element scores are also presented in the following paragraphs. Since the respondents could report experience in more than one area or level, the sum of the percentages of respondents having experience in various areas or levels may exceed 100 percent in some of the following descriptions.

Almost 90 percent of the population had some experience in retail logistics. Most of the retail experience was in base level maintenance. This was not surprising given the large number of 40XXs in the population. Approximately 47 percent of the respondents had been awarded an AFSC in maintenance, but over 52 percent reported retail maintenance experience. While supply AFSCs were reported by 19.8 percent of the respondents, base level supply experience was reported by 24.9 percent. Logistics plans and programs AFSCs represented about 21 percent of the awarded AFSCs, but retail experience in logistics plans was reported by only 17.3 percent of the respondents. Approximately 15 percent of the respondents had base level transportation experience and about 10 percent had base level procurement experience.

TABLE 3.11
Model Element Frequencies

Assignments in Logistics	Population	CL	NCL
Retail	89.4%	94.0%	83.7%
Wholesale	48.1%	62.3%	30.9%
Combat	64.1%	84.6%	38.9%
Acquisition	45.3%	55.3%	33.2%
Advanced Positions			
Commander	71.1%	68.8%	73.8%
Staff Officer	97.5%	99.2%	95.3%
Education/Training			
Advanced Degree	80.3%	84.8%	74.8%
PCE	47.3%	50.9%	34.9%
PME	98.8%	98.9%	98.7%
Professional Involvement			
Logistics Society Member	37.1%	45.8%	20.6%
Logistics Society Officer/Speaker	37.3%	48.0%	24.3%
Logistics Conference Attendee	45.8%	51.5%	38.9%
Logistics Conference Presentee	37.3%	48.0%	24.3%
Technical Competence			
Maintenance	55.0%	48.8%	62.8%
Supply	47.4%	54.2%	39.9%
Logistics Plan	58.1%	63.7%	51.2%
Transportation	33.8%	35.2%	32.2%
Procurement	29.1%	28.7%	29.6%
Qualities/Characteristics			
Leadership	97.1%	96.2%	98.3%
Managerial Ability	87.0%	86.6%	87.4%
Job Knowledge	78.4%	83.3%	72.1%
Creativity	39.8%	41.8%	37.1%
Dedication	67.0%	68.6%	65.0%
Communicative Skills	65.5%	69.9%	60.5%
Multidisciplined	24.4%	29.0%	18.7%
Flexible	57.6%	57.9%	57.1%
Common Sense	76.3%	74.9%	77.9%

Transportation and acquisition AFSCs were reported by 11.5 percent and 11.8 percent respectively. Other types of retail experience were reported by 13.4 percent. Retail experience as the Deputy Commander for Resource Management (DCR) was common in this "other" category.

Most of the respondents (30 percent) obtained their wholesale experience at an Air Logistics Center. About 3 percent had participated in the AFLC career broadening program and 5.8 percent had been in Education With Industry. Two percent of the respondents were given credit for wholesale logistics experience in the international logistics environment within AFLC. Another 20 percent reported "other" wholesale experience, such as Defense Logistics Agency, HQ AFLC, etc.

Combat logistics was the second most popular area in which the respondents reported experience. Forty-five percent of the respondents reported actual wartime experience in combat logistics. Another 36 percent reported combat exercise participation. Thirty six percent also reported mobility planning under this area of combat logistics.

Acquisition logistics was the area weighted most heavily by the weighting survey participants, but it was also the area in which the smallest percent of respondents had experience. Most of the acquisition logistics experience was in program management within AFLC (17

percent) or AFSC (13.1 percent). Education With Industry was also reported as acquisition logistics experience.

Almost all of the respondents (97.5 percent) had staff level experience in logistics. Approximately 70 percent obtained this experience at both the wing and MAJCOM level. Forty six percent had staff experience at a Numbered Air Force or Air Division. Another 32.8 percent had HQ USAF staff experience.

Command experience was one of the few model criteria in which non career logisticians had more experience than career logisticians. Fifty seven percent of all the respondents had been squadron commanders in a logistics functional area. Another 27 percent had been Deputy Commanders for Maintenance and 19 percent had been DCRs.

Under education and training, 80.3 percent of the respondents possessed an advanced degree. Approximately 13 percent received their degrees in logistics management through AFIT, while another 8.2 percent had advanced degrees in some other type of logistics area. Only 1.9 percent had a doctorate.

As expected, a very high percent of the respondents had completed PME. Only 8.4 percent had not completed Squadron Officer School, 5.1 percent had not completed Intermediate Service School, and 8.2 percent had not completed Senior Service School.

Only about half of the respondents had completed any PCE courses in a logistics area. Of those, 13.4 percent had only one course, 10.9 percent had two, 7.9 percent had three courses, and 11.5 percent had completed four or more courses.

Approximately thirteen percent of the respondents were members of the Society of Logistics Engineers (SOLE). Another 23.8 percent belonged to other logistics related professional organizations, such as the Maintenance Officers Association or National Contract Management Association. Almost 20 percent of the respondents reported that they never attend any professional logistics society meetings or conferences.

The respondents received credit for technical competence if they rated themselves at five or above on a Likert scale from 1 to 9. Technical competence in maintenance was another area in which non career logisticians appeared to be more qualified than career logisticians. However, 24.3 percent of the career logisticians gave themselves the highest competence rating in this area as opposed to 20.6 percent of the non career logisticians. On the other hand, more career logisticians (22.6 percent) rated themselves not competent (1 on the scale) than non career logisticians (15.9 percent).

The area in which most respondents rated themselves as technically competent was logistics plans. The low

percentages of respondents claiming technical competence in transportation and procurement are most likely related to the smaller percentages of these AFSCs in the population.

Given 100 points, the respondents were asked to allocate them among the model qualities and characteristics based on the relative degree to which they felt they possessed any or all of the traits. Respondents who allocated at least 10 points to any one of the qualities and characteristics were "credited" with possessing that trait. Therefore, the percentages in Table 3.11 are not meant to imply how many of our senior military logisticians did or did not possess these qualities and characteristics. Rather, the percentages serve to indicate the relative degrees to which they possessed them. The results of this self-rating exercise are detailed in Table 3.12.

Leadership is the quality in which most of our senior military logisticians rate themselves highest, with a mean rating of 22.3. Non career logisticians tended to rate themselves higher in leadership than career logisticians. Managerial ability and common sense were two other highly rated areas in which non career logisticians rated themselves higher than career logisticians.

Job knowledge was the third overall highest rated characteristic. As expected, career logisticians rated themselves higher in this area than non career logisticians. The rank order of job knowledge and common sense was

TABLE 3.12
Qualities and Characteristics Self Ratings

Population	Mean	Median	Mode	Range
Leadership	22.3	20	20	0-99
Managerial Ability	14.0	15	10	0-65
Job Knowledge	12.3	10	10	0-50
Creativity	6.7	5	5	0-30
Dedication	9.7	10	10	0-40
Communicative Skills	9.3	10	10	0-50
Multidisciplined	4.7	5	0	0-40
Flexible	8.1	10	10	0-25
Common Sense	12.1	10	10	0-50
Career Logisticians	Mean	Median	Mode	Range
Leadership	20.6	20	20	0-99
Managerial Ability	13.6	13	10	0-50
Job Knowledge	13.2	10	10	0-50
Creativity	7.0	5	5	0-30
Dedication	9.8	10	10	0-30
Communicative Skills	9.8	10	10	0-50
Multidisciplined	5.4	5	0	0-40
Flexible	8.3	10	10	0-25
Common Sense	11.8	10	10	0-50
Non Career Logisticians	Mean	Median	Mode	Range
Leadership	24.4	20	20	4-90
Managerial Ability	14.5	15	10	0-65
Job Knowledge	11.3	10	10	0-50
Creativity	6.5	5	5	0-20
Dedication	9.7	10	10	0-40
Communicative Skills	8.9	10	10	0-25
Multidisciplined	3.8	0	0	0-40
Flexible	7.9	10	10	0-20
Common Sense	12.5	10	10	0-40

TABLE 3.13

Other Qualities and Characteristics Self Ratings

Integrity (5)	Loyalty
Initiative (2)	Customer interaction
Analytic Skills (2)	Incisiveness
Team Attitude (2)	Guts
Positive Attitude	Determination
Decisiveness	Mission orientation
Well Read	Financial Management
Facilitator	Broad experience
Concern for people	Warfighting
Intelligence	PME
Technical Knowledge	Other types of experience(7)

reversed for career and non career logisticians. Job knowledge was rated higher than common sense by career logisticians, whereas common sense was rated higher by non career logisticians than job knowledge.

Dedication and communicative skills were tied in mean ratings for career logisticians. Non career logisticians, however, tended to rated themselves higher in dedication than in communicative skills. Creativity and flexibility were rated less highly than the other characteristics among both career and non career logisticians.

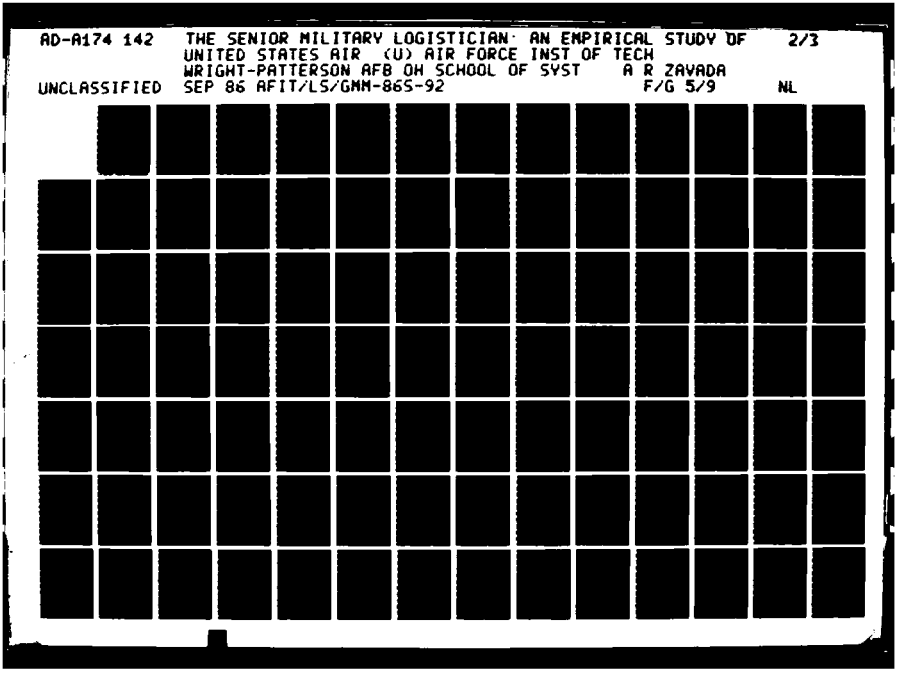
The characteristic most of the respondents seemed to lack was multidisciplined experience. Almost 42 percent of the officers gave themselves zero in this area. For career logisticians, 33.6 percent reported zeros and for non career, 50.8 percent had zeros.

The survey participants were also given the opportunity to rate themselves on a quality or characteristic not

already included in Overbey's model. Integrity was the most common additional quality indicated. Table 3.13 lists all the additional qualities rated by the respondents. The number in parentheses reflects the number of respondents who cited each trait.

Research Question 2. Are there significant differences in the degree of fit between officers in the various logistics functional areas and Overbey's model? If so, where are the differences and what are their implications?

In addition to analyzing the model scores for the population and the logistician career groups, the model scores and dimensional scores were also analyzed by duty and primary AFSC. Appendix D contains tables summarizing these scores for both primary and duty AFSC groups. Each AFSC group was also divided into career and non career logisticians. For all the duty and primary AFSC groups, the mean model and dimensional scores for career logisticians were higher than for non career logisticians. The primary AFSC group mean scores tended to be either lower than or approximately equal to the duty AFSC group scores with a few exceptions. Table 3.14 provides a summary of the high and low mean model and dimensional scores broken out by duty and primary AFSC for the population, career logisticians and non career logisticians.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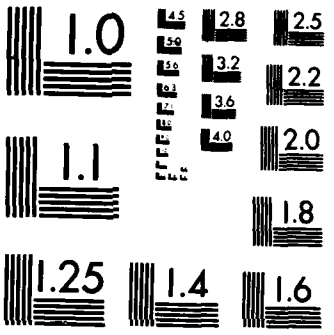

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

TABLE 3.14
High and Low Mean Scores by AFSC Group

Population Duty	AFSC/High Score	AFSC/Low Score
Model Score	66XX/73.3	"Other"/61.2
Experience	0046/30.7	65XX/22.4
Education/Training	65XX/21.9	0096/23.7
Professional Attributes	0096/17.3	66XX/23.7
Population Primary	AFSC/High Score	AFSC/Low Score
Model Score	0046/68.7	0096/60.4
Experience	0046/30.5	65XX/22.4
Education/Training	65XX/22.0	0096/17.0
Professional Attributes	"Other"/17.4	66XX/21.8
Career Logistician Duty AFSC	AFSC/High Score	AFSC/Low Score
Model Score	66XX/77.3	"Other"/61.2
Experience	40XX/33.3	65XX/23.4
Education/Training	65XX/22.4	64XX/18.1
Professional Attributes	66XX/25.3	"Other"/17.2
Career Logistician Primary AFSC	AFSC/High Score	AFSC/Low Score
Model Score	40XX/73.4	65XX/65.9
Experience	40XX/33.1	65XX/23.9
Education/Training	60XX/22.7	0046/17.9
Professional Attributes	66XX/23.6	0096/18.5
Non career Logistician Duty AFSC	AFSC/High Score	AFSC/Low Score
Model Score	0046/63.4	64XX/47.9
Experience	0046/26.8	64XX/18.1
Education/Training	65XX/21.2	64XX/14.5
Professional Attributes	0046/19.9	64XX/15.1
Non career Logistician Primary AFSC	AFSC/High Score	AFSC/Low Score
Model Score	0046/63.1	64XX/50.0
Experience	0046/26.8	64XX/18.1
Education/Training	65XX/21.2	60XX/15.5
Professional Attributes	0046/19.8	64XX/15.4

In the population groups, officers with a logistics plans and programs duty AFSC (66XX) had the highest mean model score of 73.3. The 66XX groups, however, were much smaller than the other AFSCs. In the population primary AFSC group, Directors of Logistics (0046) attained the highest model mean score of 68.7. The lowest mean model scores for the population belonged to the "other" duty AFSC group and the DCR (0096) primary AFSC groups.

Among career logisticians, the highest mean model score was 77.3 achieved by individuals possessing a 66XX duty AFSC, followed by officers with maintenance (40XX) primary AFSCs who had a mean model score of 73.4. Career logisticians with 40XX primary and duty AFSCs also had the highest mean dimensional scores for experience, while the duty and primary acquisition contracting/ manufacturing (65XX) AFSCs scored lowest in this dimension. In the education and training dimension, career logisticians with a primary 60XX AFSC scored highest. Officers possessing a 65XX AFSC had the highest mean scores for education and training among duty career logisticians. The highest mean dimensional scores for professional attributes were achieved by career logisticians with duty or primary 66XX AFSCs.

Among non career logisticians, Directors of Logistics had the highest mean model and dimensional scores except for education and training. The highest mean scores for education and training were achieved by non career

logisticians with a 65XX duty or primary AFSC. Non career logisticians with a primary or duty AFSC in supply (64XX), on the other hand, had the lowest mean model and dimensional scores. Non career logisticians with a transportation (60XX) primary AFSC also scored low in education and training. The number of non career logisticians in both 64XX and 60XX duty and primary AFSCs, however, was very small.

An analysis of variance (ANOVA) was performed between the career and non career logisticians and among the AFSC groups to determine how much the model and dimensional scores differed for the groups. A Scheffe test was also performed in those cases where the groups demonstrated a statistically significant difference. This test was used to determine which groups were affecting the results.

The model scores of career and non career logisticians were compared for the entire population. The results showed that the scores of these two major groups were significantly different. Therefore, further analyses performed on the scores of the primary and duty AFSC groups was broken out according to logistics career status. Table 3.15 illustrates the areas where statistically significant differences were found among the AFSC groups.

The model and dimensional scores of non career logisticians did not differ significantly among any of the primary or duty AFSC groups. Among the duty AFSC groups for

TABLE 3.15

Variations of Model and Dimension Scores
Among the AFSC Groups

Career Logistician Mean Scores

	Model	Experience	Education/ Training	Professional Attributes
Duty AFSC	**	**	No difference	**
Primary AFSC	No difference	**	No difference	No difference

** = statistically significant differences between the mean scores among these groups (alpha = .05).

Non Career Logistician Mean Scores

	Model	Experience	Education/ Training	Professional Attributes
Duty AFSC	No difference	No difference	No difference	No difference
Primary AFSC	No difference	No difference	No difference	No difference

career logisticians, the model and dimensional scores, with the exception of education and training, all differed significantly. The model scores for career logisticians among the primary AFSC groups differed significantly only in the experience dimension.

The significant difference in the model scores for career logisticians in the duty AFSC group could be attributed to differences in the scores of officers in the 66XX and 0046 groups and scores of the "other" AFSC group. This resulted from the fact that the 66XX AFSC duty AFSC group had the highest mean model scores followed by the 0046 group, while the "other" AFSC group had the lowest mean model scores among the career logisticians. There was also a significant difference between the mean model scores of the 66XX duty and the 65XX duty group. These two groups were the high and low mean models scorers respectively in the career logistician duty AFSC groups.

There were significant differences in the mean scores for experience among career logisticians in both duty and primary AFSC groups. For duty AFSC groups, the experience scores of 65XXs differed from all the other duty AFSCs except the transportation and "other" duty AFSC groups. The 65XXs were the lowest scorers in experience, but the experience scores of the transportation and "other" groups were not much higher than the 65XXs. The experience scores of the "other" AFSC grouping were low enough to show a statistical difference with the experience scores of the 40XXs, the 0046s, the 0096s and the 64XXs who had higher scores.

Among the primary AFSC groups, the mean experience scores differed significantly between the 65XXs and the 40XXs, 0046s, and the 64XXs. The 65XXs were the lowest experience scorers while these other AFSC groups were the first, second, and third high scorers respectively in the experience dimension.

The professional attributes mean scores for career logisticians differed significantly between the 66XX group and the 64XXs and the "other" duty AFSC groups. The 66XX duty group had the highest mean scores for this dimension while the 64XXs and "others" were the two lowest scorers.

Research Question 3. Do officers currently serving in the logistics fields view themselves as generalists or specialists? Is there any relationship between the way military logisticians view themselves and their degree of fit to the Overbey model?

Question 57 of the primary survey was used to determine whether officers currently serving in the logistics fields considered themselves to be general logisticians or specialists in one logistics function. A Likert scale from 1 to 5 was used to express agreement or disagreement. A response of 1 or 2 meant that the respondent disagreed that he or she was a general logistician. A response of 4 or 5 indicated agreement, meaning the respondent viewed him or herself as a general logistician. A response of 3 indicated

TABLE 3.16
Mean Responses to Generalist vs. Specialist Question

	Mean	No. Cases
Population	3.6	671
Career Logisticians	3.6	369
Non Career Logisticians	3.7	302
Duty AFSC (Population)		
40XX	3.3	150
60XX	3.2	37
64XX	3.3	43
65XX	2.6	61
66XX	4.7	9
0046	4.1	162
0096	4.1	67
Other	3.7	142
Primary AFSC (Population)		
40XX	3.2	128
60XX	3.4	25
64XX	3.3	31
65XX	2.7	64
66XX	3.7	7
0046	4.0	204
0096	4.1	94
Other	3.7	118

TABLE 3.17
Likert Responses to Generalist vs. Specialist Question

	1	2	3	4	5	Mean	Median	Mode
Population	36	141	57	240	197	3.6	4.0	4.0
Career Logisticians	19	86	34	128	102	3.6	4.0	4.0
Non Career Logisticians	17	55	23	112	95	3.7	4.0	4.0
Duty AFSC								
40XX	9	46	15	52	28	3.3	4.0	4.0
60XX	1	12	6	13	5	3.2	3.0	4.0
64XX	4	8	5	22	4	3.3	4.0	4.0
65XX	10	29	3	12	7	2.6	2.0	2.0
66XX	0	1	0	0	8	4.7	5.0	5.0
0046	2	19	9	57	75	4.1	4.0	5.0
0096	2	5	3	30	27	4.1	4.0	4.0
Other	8	21	16	53	42	3.7	4.0	4.0
Primary AFSC								
40XX	12	38	11	44	23	3.2	4.0	4.0
60XX	0	8	4	8	5	3.4	4.0	2.0
64XX	3	8	4	10	6	3.3	4.0	4.0
65XX	10	30	3	12	9	2.7	2.0	2.0
66XX	0	2	0	3	2	3.7	4.0	4.0
0046	2	30	11	78	83	4.0	4.0	4.0
0096	2	7	8	41	36	4.1	4.0	4.0
Other	7	18	16	43	33	3.7	4.0	4.0

1 = Strongly Disagree
2 = Disagree
3 = Neither Agree nor Disagree
4 = Agree
5 = Strongly Agree

neither agreement nor disagreement. The mean responses to this question are presented in Table 3.16. The frequencies for each response are shown in Table 3.17.

The respondents as a whole were more inclined to view themselves as general logisticians rather than specialists in one logistics area. Non career logisticians held this view to a slightly higher degree than career logisticians. The strongest sense of agreement on this issue was among officers serving in the 66XX duty AFSC. Although officers in the primary 66XX AFSC also viewed themselves more as generalists, their agreement was not as strong as officers holding the duty AFSC. Officers in the Director of Logistics and Deputy Commander for Resources duty and primary AFSCs also strongly viewed themselves as general logisticians. The 65XX officers were the only group for both duty and primary AFSCs who tended to view themselves more as specialists than generalists.

A contingency coefficient was used to determine if there was a relationship between the respondents' views of themselves as generalists or specialists and their degree of fit to Overbey's model. The respondents were divided into high and low scorers based on whether they scored above or below the mean model score. Those officers who neither agreed nor disagreed with question 57 were not included in the computations. Officers who agreed with question 57 were

TABLE 3.18

Contingency Table of High and Low Model Scorers
By Generalist and Specialist Distinction

	Low Scorers	High Scorers
Specialists	112	64
Generalists	204	226

categorized as generalists while those who disagreed were categorized as specialists. Table 3.18 illustrates the resulting contingency table.

To find the contingency coefficient, a chi square was first computed. The null hypothesis stated that there is no relationship between the respondents' views of themselves as generalists or specialists and their model scores. The alternative hypothesis stated that there is a relationship. The level of significance was set at .01. The table value for the chi square at that level of significance with one degree of freedom is 6.64. The computed X^2 value was 13.13, which was greater than the table value. Therefore, the null hypothesis was rejected. There does appear to be a relationship between the model score and the respondents' views of themselves as generalists or specialists. The contingency coefficient was calculated to determine the strength of this relationship. The computed value was .15. The upper limit of the contingency coefficient of a 2 x 2 contingency table is .707. Therefore, the strength of the relationship was observed to be very weak.

Research Question 4: What is the opinion of senior officers serving in the logistics career fields regarding the characteristics, qualifications and background requirements identified by Overbey's model? Do they agree or disagree on the criteria comprising the model?

Questions 58 through 77 of the primary survey related to the model criteria. The respondents were asked to agree or disagree with the criteria using the same 5 point Likert scale described for question 57 on the generalist/specialist issue. The mean scores for these questions are presented in Table 3.19. The table also includes Overbey's mean responses for those questions which were identical to his research. Appendix E contains more detailed information on the response frequencies by duty and primary AFSC groups.

Overall, the respondents did tend to agree with the model criteria. The lowest mean score was 3.0 resulting from the question on whether military logisticians should attain an advanced degree in logistics management at AFIT. On the average the respondents neither agreed nor disagreed with this question.

There were two requirements in which the respondents of this study agreed more strongly than Overbey's participants. These were in command experience and continuing education for senior military logisticians. In all other areas, the respondents agreed to a lesser extent than Overbey's participants. Career logisticians tended to agree more strongly than non career logisticians on the model criteria

TABLE 3.19

Mean Scores for Questions Related to Overbey's Model Criteria

Topic	Population Mean	Overbey Mean	CL Mean	NCL Mean
Advanced Degree	3.6	4.2	3.7	3.5
AFIT Degree	3.0	3.4	3.0	3.1
Professional Involvement	3.3	3.9	3.3	3.2
Multidisciplined	4.1	4.3	4.1	4.2
Command Experience	4.2	4.1	4.2	4.2
Staff Experience	4.4	4.6	4.5	4.4
Qualities of a Military Logistician	4.0	4.3	4.1	3.9
Qualities of Military Logistician Same as Military Officer	4.1	N/A	4.1	4.2
PME	3.3	N/A	3.3	3.4
Continuing Education	3.8	3.6	3.7	3.9
Logistics Background:				
Retail	4.1	4.2	4.4	3.8
Wholesale	3.9	4.2	4.2	3.6
Combat	3.7	4.3	3.9	3.5
Acquisition	3.5	3.6	3.6	3.5
International	3.1	3.1	3.1	3.0
Technical Competence:				
Transportation	3.3	3.6	3.4	3.3
Supply	3.6	3.9	3.7	3.5
Maintenance	3.7	4.2	3.7	3.6
Procurement	3.4	3.6	3.4	3.4
Logistics Planning	3.7	4.0	3.7	3.6

with the following exceptions: command experience, PME, continuing education, multidisciplined experience, completion of an AFIT degree program and procurement competence.

Overbey included PME completion in his model of the professional senior military logistician as part of the "whole person" concept (14:127). A question was added to the primary survey to determine if PME enhanced the logistics educational development of the individual as well. The mean response to this question was 3.3 for both the population and career logisticians and slightly higher 3.4 for non career logisticians.

The respondents agreed with Overbey's participants that there are identifiable qualities and characteristics that distinguish a successful military logistician from an unsuccessful one. This study, however, included another question not asked by Overbey. The respondents were asked whether those identifiable qualities and characteristics were unique to military logisticians or if they were the same as those which distinguished any successful military officer from an unsuccessful one. The respondents agreed that the qualities and characteristics were the same for both groups.

The mean scores of the survey respondents were compared with those of Overbey's participants using a statistical t test. The null hypothesis stated that there was no

TABLE 3.20
t Test Results for Differences Between Mean Responses to Questions Related to Overbey's Model Criteria

Criteria	Mean	Overbey's Mean	T Value
Advanced Degree	3.63	4.24	2.55
Professional Involvement	3.29	3.94	3.09
Combat Logistics Background	3.68	4.27	2.69
Maintenance Technical Competence	3.69	4.19	2.39

T value at alpha of .05 = 1.96

difference between the mean responses of Overbey's participants and the mean responses of the participants of this study. The level of significance was set at .05. The null hypothesis was rejected for four mean responses which indicated a statistically significant difference between the two groups in four areas. These included the requirements for an advanced degree, active involvement in a professional logistics society, an assignment in combat logistics, and technical competence in maintenance. The t test results for these areas are summarized in Table 3.20. The qualities and characteristics included in Overbey's model were those cited by more than half of his participants as being essential to the professional senior military logistician. In question B of the primary survey the respondents were asked to allocate 100 points among the model qualities and characteristics based on their own assessment of the relative importance of

TABLE 3.21

Primary Survey Respondents' Ratings of the Importance of Qualities and Characteristic to the Military Logistician

	Mean	Mode	Percent Allocating Zero Points
Leadership	22.10	20	0.8%
Managerial Ability	13.60	10	4.1%
Job Knowledge	13.00	10	4.3%
Creativity	6.80	10	14.1%
Dedication	9.00	10	10.5%
Communicative Skills	9.70	10	6.2%
Flexibility	7.60	10	10.5%
Common Sense	11.60	10	5.6%
Multidisciplined	5.90	0	31.8%
Other	.06	0	95.3%

each to the professional senior military logistician. A rating of zero, therefore, would indicate disagreement that the quality or characteristic was essential. The respondents were also given the opportunity to include additional qualities and characteristics not already in the model. The results of the points allocation are presented in Table 3.21.

The percentages of respondents allocating zeros to any of the qualities and characteristics was relatively small with the exception of multidisciplined experience. Almost 32 percent of the respondents felt that this characteristic

TABLE 3.22

Other Qualities and Characteristics Considered Important to the Military Logistician

Integrity (26)
Sensitivity toward people (23)
Understand the mission (16)
Experience outside logistics (14)
Patience (10)
Team attitude (10)
Sense of Humor (9)
Persistence (9)
Listening ability (8)
Political Sophistication (5)
Loyalty (4)
Initiative (3)

should not be a requirement of the professional senior military logistician. Only 31 respondents out of 671 allocated points to a trait not already included in the model. Many respondents, however, did include additional traits in the comments section of the questionnaire. Table 3.22 provides a listing of the most commonly cited traits in their order of frequency. A tally of the number of respondents citing each trait is included in parentheses.

Summary

This chapter reported the results of the research. The weighting survey results indicated that the components of Overbey's model varied in their degree of importance to the development of the senior military logistician. Experience was viewed as the most important dimension of the model, followed by closely by professional attributes. The education and training dimension was perceived as the least important aspect of the model.

A response rate of 68 percent was achieved for the primary survey sent to senior officers in the logistics career fields. The respondents were categorized as career and non career logisticians. A total "model score" and three "dimensional scores" were computed for the respondents. The model scores range from 24.5 to 100. The average model score was 65.8. Career logisticians scored higher than non career logisticians in both the model and dimensional scores. The scores were analyzed by duty and primary AFSC as well as for career and non career logisticians.

An analysis of variance was done to determine if there were significant differences in the mean scores among the groups. Among all the non career logistician duty and primary AFSC groups, there were no differences in any of the mean model or dimensional scores. For career logisticians there were no significant differences in the education and training mean scores. The mean model scores and the experience and professional attributes mean scores, however, were significantly different among the duty AFSC career logisticians. For the primary AFSC career logistician groups, there was significant differences in the mean experience scores.

Overall, the respondents tended to view themselves as generalists rather than specialists. The correlation between the an individual's model score and the individual's

view of himself or herself as a generalist or specialist was very weak.

The responses to questions directed at the criteria of Overbey's model were positive and only differed from the responses of Overbey's participants in level of agreement. Four of the mean responses did differ significantly in intensity from Overbey's research. These responses related to the requirements for an advanced degree, professional involvement, combat logistics experience and maintenance technical competence. Among the qualities and characteristics included in the model, leadership was seen as most important to the seni r military logistician by the respondents. Being multidisciplined was perceived as the least important characteristic. In the final chapter, conclusions and recommendations will be drawn from these findings.

IV. Conclusions and Recommendations

Review

Lt Gen Leo Marquez, Deputy Chief of Staff, Logistics and Engineering, HQ USAF, has expressed concern about the preparedness of senior Air Force military logisticians to effectively manage the total logistics system (9:10). This concern has rekindled the debate over whether military logisticians should have a broad base of experience and education across the logistics spectrum or specialized training and experience in one logistics area. Various career development plans to cultivate broadly experienced and educated Air Force military logisticians have been proposed over the last 20 years. However, no formal plan has ever been implemented. Current career development guidance in AFR 36-23 and AFR 36-1, however, seems to promote the philosophy of generalization by encouraging career broadening and varied levels of experience among logistics officers. Whether that guidance by itself has been adequate enough to produce the required number of qualified logisticians to fulfill the Air Force's logistics management needs was unknown. Therefore, this research was aimed at assessing the qualifications of senior Air Force officers currently serving in the logistics career fields who are products of this loosely structured career development system.

To objectively assess the qualifications of our senior military logisticians, officers in this study were measured against a model developed by Captain Allan D. Overbey (14). Overbey's model outlines the essential qualities, characteristics, and background requirements for a professional senior military logistician. A secondary objective of the study was to survey the opinions of these same officers on the characteristics, qualifications, and background requirements which comprise the model. It was important to determine the model's acceptance by the research participants because Overbey's model has the potential to serve as a standard for the "ideal" senior military logistician or as a guide for any future career development proposals.

The research design consisted of four phases. Phase one was a review of applicable Air Force career development literature. Phase two focused on developing weightings for the components of Overbey's model. Phase three involved development of the primary survey used to gather data on the backgrounds and qualifications of colonels currently serving in the logistics fields. This phase continued through actual data collection. Phase four was the actual data analysis.

A total of 671 colonels returned the primary survey for a response rate of 68 percent. The following sections present the conclusions and recommendations based on the findings of this research.

Research Question 1: Conclusions on How Well the Survey Respondents Fit Overbey's Model.

The weighted Overbey model proved useful as a means of systematically evaluating the backgrounds and qualifications of the primary survey respondents. The graphical depictions of the model and dimensional scores resulting from the model quantification provided a concise and easily understandable way of presenting the data. The following conclusions were made regarding the degree of fit to which the senior military logisticians fit the model.

As a group, senior officers currently serving in the logistics career fields do not "fit" Overbey's model to a high degree. The average model score for all the survey respondents was 65.8. As expected, officers spending the majority of their careers in logistics had a better fit to the model than non career logisticians. For career logisticians, the average model score was 70.4 and for non career logisticians, the average was 60.0. There was a wide range of scores from 24.5 to 100. Only one officer scored a "perfect fit" of 100 against the model.

It was very unlikely for the respondents to have completed assignments in all of the logistics areas of retail, wholesale, combat and acquisition logistics. Only 21.9 percent of the officers had experience in all four areas. About 23 percent had experience in only one area, 28.6 percent in two areas and 26.8 percent in three areas.

The officers were much more likely to have had both staff and commander experience. In fact, 70 percent of all the respondents met both these elements of advanced positions and almost all had at least staff officer experience.

Experience was a key discriminator between career and non career logisticians in assignments in the wholesale, combat and acquisition logistics areas. There was little difference between the two groups for retail experience and advanced positions. In fact, non career logisticians were more likely to have had assignments as a commander than career logisticians.

The officers proved, however, to be a well educated group. All three elements of the education and training dimension were met by 36.5 percent of the respondents. Another 43.7 percent met the advanced degree and professional military education (PME) requirements, but had not completed any professional continuing education (PCE) courses in logistics. Almost all of the respondents met the PME criteria and only about 20 percent did not possess an advanced degree. PCE was the area of education in which most officers fell short. Only 47.3 percent of the respondents had completed at least one PCE course in a logistics area.

Although, technical training was not a specific element of Overbey's model, the researcher investigated the number of technical training courses in logistics disciplines

completed by the respondents. A little over 29 percent of the officers had never attended a technical training course in a logistics area. About 21 percent had attended only one. Fourteen percent of the respondents, however, had completed five or more technical training courses.

There was little difference in the mean scores for the education and training dimension between career and non career logisticians. In fact, the median score was the same for both groups. Any difference that did occur was due mostly to less completion of PCE for non career logisticians.

The criteria of the professional attributes dimension were the most difficult for the senior military logisticians to fulfill. This was especially true for professional involvement and technical competency. Only 18.6 percent of the officers were involved in all aspects of professional involvement, to include membership and active participation in a logistics society and frequent attendance at conferences or meetings. Only 13 percent of the officers were members of the Society of Logistics Engineers (SOLE). Almost 38 percent had no professional involvement of any sort.

On the average, the respondents earned less than half of the points available for the technical competence category. About 63 percent of the officers rated themselves technically competent in at least two of the logistics areas

included in the model. This percentage included: 9.4 percent who considered themselves to be technically competent in all five areas; 10.9 percent rated competent in four areas; 17.9 percent rated competent in three areas and 24.4 percent rated competent in two areas. Only 6.7 percent of the respondents were not considered technically competent in any of the logistics areas. Eighty percent of those were non career logisticians.

The percentage of officers rated as technically competent in each logistics area was expected to be at least equal to the percentage of officers who had been awarded the corresponding logistic field AFSC. This expectation was based on the assumption that the officers would rate themselves technically competent in their own logistics career area. A comparison of the percentage of respondents awarded each AFSC and the percentage claiming technical competency is presented in Table 4.1.

The number of officers reporting technical competency in each functional area was higher than the number awarded each corresponding AFSC. This indicated that many officers considered themselves to be technically competent in areas outside of their primary field. Logistics planning was the area in which most of the officers were technically competent. This was also the area that had the highest difference in percentages. Over 37 percent more officers reported technical competency in logistics planning than the

TABLE 4.1

Comparison of Percentage of Awarded AFSCs With Percentage Technically Competent

Functional Area	Percent Awarded The AFSC	Percent Claiming Technical Competency
Maintenance	47.2%	55.0%
Transportation	11.5%	33.0%
Supply	19.8%	47.4%
Procurement	11.8%	29.0%
Logistics Planning	20.9%	58.1%

number that had been awarded the 66XX AFSC. For transportation, about three times the number of respondents who had been awarded tne 60XX AFSC rated themselves technically competent in this area. Officers claiming technical competence in supply out numbered those who had been awarded the 64XX AFSC by an additional 27 percent. For procurement, the difference was 17 percent more officers who were technically competent. The number of officers reporting technical competency in maintenance, however, was only about 8 percent higher than the number awarded the 40XX AFSC.

Table 4.2 illustrates the rank order in which senior military logisticians tend to possess each of the personal qualities and characteristics cited in Overbey's model. These rankings are based on self-evaluations of the relative degrees to which the respondents felt they possessed each

TABLE 4.2

Personal Qualities and Characteristics Self-Rankings Of Population Compared to Weighting Survey Rankings

	Population	Ranking of Weighting Survey Participants
1.	Leadership	Leadership
2.	Managerial ability	Job knowledge
3.	Job knowledge	Common sense
4.	Common sense	Managerial ability
5.	Dedication	Multidisciplined
6.	Communicative skills	Communicative skills
7.	Flexibility	Dedication
8.	Creativity	Creativity
9.	Multidisciplined	Flexibility

trait. The rank order of these qualities and characteristics resulting from the weighting survey is also shown.

The average score for the personal qualities and characteristics model category was 10.1 out of a possible 14.4 points. Leadership was overwhelmingly the one trait possessed to a high degree by almost all of the respondents, while multidisciplined experience was the characteristic most lacking. The predominance of leadership is not surprising given the fact that all of the participants in the study were colonels. Leadership is considered a necessary trait in the military officer and anyone achieving the higher ranks is likely to possess this quality to a great degree. Likewise, the ranking of multidisciplined experience could be expected to be last given the small percent of officers having experience in several logistics areas. The predominance of some of the other traits,

however, is very interesting. The relatively high ranking of common sense by both the weighting survey participants and the primary survey respondents was not expected to be so great. This is not to say that the researcher did not expect the officers to possess much common sense, but rather its relative importance was not expected to be so great. It seems, however, that common sense is very important to the successful military logistician.

The dimensional scores for professional attributes did not vary as much between career and non career logisticians as expected. Professional involvement was the category of this dimension having the largest score variations between the two groups. The category scores for technical competence, however, were very close. The difference between the mean technical competence category scores of the two groups was only 0.4. One reason the scores may be more similar than expected is that more non career logisticians (who were rated officers) were technically competent in maintenance than non career logisticians. Maintenance was the most heavily weighted element of the technical competence category. The high level of technical competence among the non career logisticians most likely stems from their familiarity with maintenance from the "customer" side. Although more career logisticians than non career logisticians were technically competent in all areas besides maintenance, the differences in the two groups were small for transportation and procurement technical competency.

TABLE 4.3

Comparison of Career and Non Career Logistician
Personal Qualities and Characteristics Self-Rankings

	Career Logisticians	Non Career Logisticians
1.	Leadership	Leadership
2.	Managerial ability	Managerial ability
3.	Job knowledge	Common sense
4.	Common sense	Job knowledge
5.	Communicative skills	Dedication
6.	Dedication	Communicative skills
7.	Flexibility	Flexibility
8.	Creativity	Creativity
9.	Multidisciplined	Multidisciplined

The category scores for personal qualities and characteristics only varied by .05 between career and non career logisticians. Table 4.3 compares the rankings between career and non career logisticians. The two groups looked very much alike except for a reversal of the rank order of job knowledge and common sense and communicative skills and dedication in each group. The ranking reversal of job knowledge and common sense between career and non career logisticians is not unusual since officers who have spent an entire career in logistics areas could be expected to have a higher degree of job knowledge in logistics than non career logisticians. What seems to be insightful here is that the non career logisticians seem to compensate for their lesser degree of job knowledge by relying more on common sense than a career logistician might. The career

logistician may rely more heavily on his or her knowledge of the subject when making a decision. Of course, common sense will also be important to the career logistician, but it may more likely be secondary to his or her expertise. The non career logistician, on the other hand, may rely more heavily on the expertise of his or her staff for information and then make the decision using common sense to evaluate the alternatives.

This same reasoning may apply to the reverse order of communicative skills and dedication. Non career logisticians are at a disadvantage when they first enter the logistics arena. Obviously, they will have less experience and job knowledge in logistics than the career logisticians. For this reason, non career logisticians will have to work harder . . "getting up to speed" to fill a new logistics position. Many extra hours must be dedicated to a job when an individual is trying to master something new. Communicative skills become secondary to dedication, because the first priority is working hard at learning the job. This may be the reason why the quality of dedication is more highly rated in the non career logistician.

Strengths and Weaknesses. The dimensional and category scores provided an easy means of pin-pointing the strengths and weaknesses of the current senior military logisticians. In the experience dimension, the greatest strengths of the officers were retail logistics assignments

and staff level advanced positions. For education and training, PME completion and advanced degrees were prevalent among the respondents. In the professional attributes dimension, the officers scored highly in most of the more heavily weighted personal qualities and characteristics. Leadership appears to be the key quality for senior military logisticians that almost all of them possessed. About 58 percent of the officers were technically competent in logistics planning and almost 63 percent of the respondents were rated technically competent in two or more of the five logistics areas of the model.

The officers also had weaknesses in each of the model dimensions. In experience, the officers were particularly weak in wholesale and acquisition logistics experience. Less than half of the officers had experience in those two areas. The education and training weakness of the officers was in their lack of PCE. More than half of the officers had not had, or had not taken, the opportunity to complete any PCE in logistics areas. For professional attributes, the officers were especially weak in professional involvement. Only 18.6 percent of the officers were actively involved in all aspects of professional involvement and 38 percent had no involvement at all. The personal qualities and characteristics that the officers did not rate highly in were creativity and multidisciplined experience.

Research Question 2: Conclusions on the Differences in Fit Between AFSC Groups.

The AFSC groups were analyzed according to the duty and primary AFSCs that were self reported by the respondents. This was done because the researcher felt this would create the "purest" AFSC grouping; that is, there would not be any of overlap officers among the AFSCs. If the awarded AFSCs had been used, there would have been a duplication of officers in each AFSC group because about 57 percent of the respondents had been awarded more than one of the AFSCs included in the study. Also, it was not feasible to use combinations of awarded AFSC groups because there were 49 different combinations observed.

The researcher had anticipated that the primary AFSC reported for career logisticians would represent the logistics career field with which the officer was most closely aligned, a sort of "root" AFSC. On the other hand, the researcher anticipated that non career logisticians would report some other non logistics type AFSC as their primary. Thus, a clear alignment could be made for each respondent to one of the AFSCs under study. Duty AFSCs were expected to identify the logistics area in which the officer was currently assigned or else the duty AFSC would indicate that the officer was not presently in a logistics job.

The duty and primary AFSCs, however, did not partition the respondents as neatly as anticipated. There were

several reasons for this. First, the respondents' reliability in reporting their duty and primary AFSCs was questionable. This is based upon the fact that in many cases, the information was either not provided or the information conflicted with other information about the respondent, such as the present duty title or the duty history. Secondly, the number of officers who reported AFSCs other than those included in the study was larger than anticipated.

Although the primary AFSC group mean scores tended to be lower than the duty AFSC scores, the researcher could find no apparent explanation for this. In retrospect, analyzing the AFSC groups according to the awarded AFSCs would have more accurately represented the logistics functional area groups than the duty and primary AFSC breakout. In the future, any further comparative analysis between the logistics AFSC groups using this database should be done based on the awarded AFSCs.

There were fewer differences in the degree of fit to the model among the different AFSC groups than the researcher had anticipated. Among non career logisticians there were no statistically significant differences in the mean model scores or any of the dimensional scores for any of the duty or primary AFSC groups. This seems to indicate that the logistics career field which non career logisticians enter has no affect on the officers'

opportunities or abilities to fulfill the criteria of Overbey's model. No one logistics career field seems to produce a better or worse qualified non career logistician than any other.

The model scores between career logisticians differed significantly among officers in the duty AFSCs. This occurred because the mean scores of 66XX and 0046 officers were much higher than scores of the 65XX and "other" duty AFSC group. There were no differences among the career logistician primary AFSC groups. The fact that only the duty AFSC groups differed may be due to the smaller number of officers in the "other" duty AFSC category.

In comparing the mean dimensional scores among the career logistician AFSC groups, the experience scores were significantly different among both the duty and primary AFSC groups. This lends support to the fact that experience appears to be a key factor in separating well qualified logisticians from less qualified logisticians. The differences in experience between the duty AFSC groups was due to the lower scoring 65XX and "other" AFSC groups. For the primary AFSC group, the differences were also due to a low scoring 65XX group.

The lack of variation in the education and training scores among the AFSC groups was not surprising because all of the respondents scored well in this dimension. Since most of the score differences were due to PCE completion or

non-completion, this comparison of scores shows that no one group had significantly more or less PCE than any other.

The professional attributes scores of the duty AFSC groups differed significantly due to variations caused by high scoring 66XX officers and low scoring 64XX and "other" AFSC officers. There was no difference in the dimensional scores of the primary AFSC groups for professional attributes.

Overall, the degree of variation in the model and dimensional scores among the duty and primary AFSC groups was not widespread. The small number of high scoring career logisticians in the 66XX duty AFSC effected the model and professional attributes score variations. On the other hand, it was mostly the low scoring 65XX duty and primary AFSC groups that effected the variations in the model and experience scores. It appears, therefore, that aside from a small group of highly qualified officers possessing a 66XX primary AFSC, and the duty and primary group of officers possessing the 65XX AFSC, the degree of fit to Overbey's model does not vary much among the different AFSCs. No other career fields seem to have a significant advantage over or be at a disadvantage compared to the others in meeting the criteria of the model. The advantage of the 66XX officers appears to be in the higher likelihood of professional involvement and multidisciplined experience. The disadvantage of the 65XX officers is due to their lack of experience in various logistics areas and as commanders.

Research Question 3: Generalists vs Specialists

The respondents of the primary survey tended to view themselves more as general logisticians rather than specialists in one logistics functional area. Slightly over 65 percent agreed that they considered themselves to be general logisticians. Approximately 26 percent of the officers did not consider themselves to be general logisticians. Another 9 percent were neutral on the question. A weak relationship existed between the respondent's model score and his or her view of himself as a generalist or specialist. Non career logisticians were slightly more inclined to see themselves as generalists than career logisticians.

Officers possessing the 65XX AFSC were the only group more likely to see themselves as specialists. This seems to be compatible with the evidence that these officers have less experience in other logistics areas and tend to score lower on the model than officers possessing the other AFSCs under study.

The officers most likely to see themselves as generalists were the 66XX AFSC duty group. This perception, along with the fact that these officers had the highest mean model scores, may lend truth to a commonly held belief that logistics plans and programs officers are the "true" Air Force logisticians.

It is also interesting that Directors of Logistics (0046) and Directors for Resource Management (0096) also viewed themselves as generalists. Directors of Logistics were the highest model scorers among the non career logisticians and among the primary AFSC groups of the population. The 0096 officers, however, were low scorers among the population primary AFSC groups. They also tended to score lower among the other career and non career duty and primary groups. Their views of themselves are not congruent with the 0096 model scores; therefore, it may be that their perceptions are related to the nature of their responsibilities, which cut across several logistics functions. The large number of 0096 non career logisticians who strongly viewed themselves as generalists most likely affected the tendency for non career logisticians to view themselves more as generalists than career logisticians

Officers in the 40XX, 60XX and "other" AFSC groups were slightly more inclined to see themselves as generalists than as specialists. Their perceptions of themselves as generalists, however, were not nearly as strong as the 66XXs, the 0046s or the 0096s.

Research Question 4: Validating Overbey's Model

This research supported tne importance of the criteria in Overbey's model to the career development of the senior military logistician. The primary survey respondents tended to agree with the model criteria. There were, however, four

criteria on which they agreed to a significantly lesser extent than Overbey's respondents. These criteria included the requirement for an advanced degree, professional involvement, combat logistics background and maintenance technical competence. The researcher suspects that the lower levels of agreement compared to Overbey's was due to the large percent of non career logistician respondents, who neither agreed nor disagreed with most of the questions relating to the model criteria.

The lesser agreement on maintenance technical competency was surprising nonetheless; given the large number of maintenance AFSCs represented by the respondents. Maintenance, however, was the area of technical competence with the highest mean Likert scale response. This was consistent with Overbey's findings and it also supports the highest weighting given to maintenance in the model by the weighting survey participants.

The primary survey respondents tended to agree that PME was a valuable source of education in the area of logistics. This indicates that PME is appropriate in the model as a source of education in logistics as well as being included as part of the "whole person" concept as Overbey originally intended (14:127).

The survey respondents also agreed with Overbey's participants that there are identifiable qualities and

TABLE 4.4

Comparison of Primary Survey and Weighting Survey Personal Qualities and Characteristics Rankings

Ranking of Primary Survey Participants	Ranking of Weighting Survey Participants
1. Leadership	1. Leadership
2. Managerial ability	2. Job knowledge
3. Job knowledge	3. Common sense
4. Common sense	4. Managerial ability
5. Communicative skills	5. Multidisciplined
6. Dedication	6. Communicative skills
7. Flexibility	7. Dedication
8. Creativity	8. Creativity
9. Multidisciplined	9. Flexibility

characteristics that distinguish a successful military logistician from an unsuccessful one. However, the respondents also supported the belief that the identifiable qualities and characteristics of a successful senior military logistician are the same as those which distinguish any successful military officer from an unsuccessful one.

The primary survey respondents were supportive of the personal qualities and characteristics included in the model. Table 4.4 provides a comparison of rankings between the primary survey respondents and the weighting survey participants. The ranking in importance of these traits by the two groups is very similar. A Spearman Rank Correlation analysis, performed using an alpha of .05, supported this conclusion. The greatest difference of opinion, however, between the two groups was in the importance of multidisciplined experience.

There are may be two reasons why the primary survey participants do not view multidisciplined experience as important to the senior military logistician as the weighting survey respondents. First, the rankings of the traits are in the almost the same order as the degrees to which they were possessed by primary survey respondents. Since multidisciplined experience was the least possessed trait, the respondents tended to rate it lowest. Another reason may be that the respondents felt that multidisciplined experience was already covered under the experience dimension of the model.

Discussion

The weighting survey results showed that the components of Overbey's model vary in their degree of importance. The research seems to indicate that experience is the most important aspect in developing a qualified senior military logistician. The findings support this conclusion in several ways. First, the participants of the weighting survey gave experience the highest ranking among the model dimensions. Experience was also cited by 88.1 percent of the primary survey respondents as the aspect of their backgrounds which best prepared them to fill their current or most recent logistics position. The primary survey respondents also most frequently cited experience as the source through which they gained their technical competence in the logistics disciplines. This is significant

considering that technical competence was the highest weighted category of the professional attributes dimension. The dimensional scores for experience, therefore, seem to be a key factor in distinguishing between the levels of qualification for senior military logisticians.

Education and training, on the other hand, is much less important to the senior military logistician than experience or professional attributes. Education and training was the lowest weighted model dimension. Also, less than 4 percent of the primary survey respondents cited education (including advanced degrees, technical training and PME) as the most important aspect of their backgrounds in preparing them for a logistics position. As a means of achieving technical competence, education and training ranked third after experience and association with others in the field outside one's primary job.

The education and training dimension of Overbey's model did not appear to be a discriminating factor between the levels of senior military logistician qualification. The education and training dimension score was the only score in which no significant differences were observed among any of the career or non career logistician AFSC groups. Except for PCE, the majority of the respondents fulfilled the educational criteria of Overbey's model.

Professional attributes were also seen as very important to the development of the senior military

logistician. This dimension was weighted a close second to experience. There seems to be an interactive effect between experience and professional attributes. As stated previously, experience in the logistics areas influences technical competency. Experience in command and staff positions may influence some of the personal qualities and characteristics such as leadership and managerial ability.

Many of the components of Overbey's model are not at all unique to the military logistician. The primary survey respondents agreed that the qualities and characteristics that distinguish a successful military logistician from an unsuccessful one are the same as those that distinguish any successful military officer from an unsuccessful one. This implies that military officers in any career field could attain some minimal scores against Overbey's model. Thus, there is probably some level above which the scores become discriminating for logisticians compared with non logisticians.

Meeting all the criteria of Overbey's model, on the other hand, is a rigorous test of the qualifications of a senior military logistician. Only one senior officer out of 671 was able to attain a perfect score. Therefore, although it is possible to fulfill all of the model criteria within a career, not many officers have been able to do so. The average model score was only 65.8.

Does this mean that the present career development system is not adequately producing well qualified logisticians? The latest career development proposal initiated by the Air Staff recommended that 20 percent of the officers in the logistics career fields be groomed as general logisticians. No career development plan has ever proposed that all officers in the logistics career fields become generalists. Therefore, in order to answer the question, the average model score computed for the population may not be as important as looking at the top 20 percent of the career logisticians. Thus, an analysis of the top 20 percent of the career logisticians was made. Only the career logisticians' qualifications were analyzed because the previous logistics career development plans have been aimed at this group.

There were 74 officers in the top 20 percent of the career logisticians. Of those, 13 possessed only one of the logistics AFSCs included in this study. Ten of those 13 had only the 40XX AFSC and 3 had only the 64XX AFSC. Over 21 percent of all the officers in the top 20 percent possessed a 40XX/0046 combination. Almost 11 percent had a 40XX/66XX/0046 combination. Four of the officers possessed a combination of five logistics AFSCs. There were no officers in the top 20 percent who possessed only the 0046 or 0096 AFSCs.

TABLE 4.5

Comparison of Percent of Awarded AFSCs in the Population With the Top 20% of Career Logisticians

Awarded AFSCs	Career Logistician Population Percent	Career Logistician Top Group Percent
40XX	42.3%	60.8%
60XX	14.4%	10.8%
64XX	30.9%	25.7%
65XX	13.8%	9.5%
66XX	27.9%	41.9%
0046	50.9%	62.2%
0096	22.0%	17.6%

The percent of officers in the top group possessing each awarded AFSC was compared to the percent of population career logisticians who possessed each awarded AFSC. The results of this comparison are in Table 4.5. If no differences in scoring potential existed among the AFSC groups, the percentages represented in the top group would be about the same as the population percentage for each AFSC group. It appears, however, that the 40XX and 0046 AFSCs are over-represented in the top group, as were 66XX AFSCs. The 60XX, 64XX, 65XX and 0096 AFSCs, on the other hand, were slightly under-represented. The over-representation of the 66XX officers and under-representation of 65XX officers are congruent with the findings of the analysis of variance results. For the career logistician primary AFSC groups, the model scores of these two groups were found to be significantly different. There seems to be support in this analysis of the top scoring group that officers with

backgrounds in maintenance also have an advantage in meeting the model criteria over those with supply or transportation or contracting and acquisition backgrounds. It also appears that officers filling or having filled the Directors of Logistics (0046) positions are likely to have an advantage over those presently or previously in Deputy Commander for Resources (0096) positions.

The lowest model score for the top 20 percent was 80.3. The lowest experience score was 27.8, the lowest education score was 14.7, and the lowest professional attributes score was 17.7. About 66 percent of the top 20 percent had perfect scores in experience. Every officer in this group had filled a commander position and 93.2 percent had staff experience. All of the officers had at least two assignments in the logistics areas. Seventy-three percent, however, had experience in all four logistics areas included in the model.

A little over 78 percent of the top 20 percent had perfect scores for the education and training dimension of the model. About 81 percent of all the top officers had completed PCE courses. Another 18.9 percent had advanced degrees and PME, but no PCE.

Looking at professional attributes, 87.8 percent of the top twenty percent were involved in a professional logistics association. Seventy three percent were members of a professional logistics society. A little over 20 percent of

the officers were technically competent in all the logistics fields included in the model. About 58 percent were competent in three of the fields. Only 3.1 percent were technically competent in only one field.

Leadership was the one quality possessed by 100 percent of the officers in this top group. The rank order of the degree to which these officers possessed the other personal qualities and characteristics identified in the model was: job knowledge, managerial ability, common sense and communicative skills (tie), dedication, flexibility, creativity and multidisciplined experience.

The analysis of the top 20 percent of the senior military career logisticians revealed that they were a well qualified group. Their average model score was 86.4. The median score was 85.3 and the standard deviation was 4.4. The high number of officers fulfilling all the criteria of the model in the experience dimension supports the belief that experience is a key factor in separating the highly qualified logistician from the less qualified. Most notably, these top scorers tend to be more involved in professional logistics organizations and activities and they are much more likely to have continuing education in logistics.

It appears from this final analysis that the current career development system for logistics officers is producing some well qualified logisticians. The top 20

percent of the career logisticians included in this research "fit" Overbey's model to a high degree. Given that the senior military logisticians in this study were not products of a formal career development plan, the qualification level of the top 20 percent of career logisticians is probably higher than expected. It may be that the current career development guidance for officers in the logistics career is adequate for developing qualified general logisticians. Whether the qualification level and number of the high scoring career logisticians identified through this research adequately meet the Air Force's need for qualified, well rounded logisticians may require further study.

However, since this research confirmed the validity of Overbey's model, it seems reasonable that meeting all or most of the model criteria would indicate that the senior military logistician was well qualified. Additionally, since the latest career development proposal suggested a goal of having 20 percent of logistics officers attaining the rank of colonel qualified as well rounded logisticians; it appears that the numbers of well qualified logisticians identified in this study would also be adequate. Based on these two premises, it is the researcher's studied opinion that the current career development policy and guidance is producing adequate numbers of well rounded senior military logisticians to manage the complex Air Force logistics system.

This conclusion, combined with the fact that all past formal career development proposals have faced implementation problems, prompts the researcher to suggest that it is time to abandon issue of instituting a formal career development system for military logisticians. This research has shown that there is a high acceptance of Overbey's model among senior military logisticians. Therefore, the researcher recommends that Overbey's model be endorsed by the Air Force as a template for officers aspiring to become well qualified senior military logisticians. Used as a tool for individualized career planning, the model can be a valuable adjunct to the renewed "philosophy" of promoting career broadening and generalization among logistics officers. Officers in the logistics career fields can, with their career monitors, periodically measure themselves against the model when making career decisions. A campaign to encourage logistics officers to actively pursue fulfillment of the model criteria is a practical alternative to the administratively cumbersome formal career development plans.

Recommendations

This research has provided evidence that the degree of qualification among current Air Force senior military logisticians ranges from "poorly" qualified to "perfectly" qualified. The assessment of the qualifications of these senior officers is based upon their "degree of fit" to

Overbey's model. Overall, today's practicing senior military logisticians do not fit Overbey's model to a high degree. However, 20 percent of the career senior military logisticians appear to fit the model very well.

The senior military logisticians in this study agreed that the criteria comprising Overbey's model is valuable to the development of the military logistician. Overbey's model, therefore, is a valid representation of the essential qualities, characteristics, and background requirements of the professional military logistician. As such, the employment of Overbey's model in individualized career planning offers a practical and realistic approach to logistician career development. There are three recommendations.

1. Additional research should be accomplished to identify the minimum degree to which a logistician can fit Overbey's model and still be considered well qualified to manage the complexity of the Air Force logistics system. Such research is required to support this researcher's opinion that the present career development of military logisticians adequately produces the number and caliber of officers required to fulfill key logistics management positions within the Air Force.

2. Policy makers at Air Staff should give serious consideration to formally endorsing Overbey's model as a template for officers aspiring to high level Air Force

logistics positions. Upon formal endorsement, Overbey's model should be incorporated into the career guidance booklets currently available for maintenance and supply officers. Additional career guidance booklets should be published for the other logistics career fields and Overbey's model should be incorporated in those as well. The model should be used as a "marketing" tool for promoting career broadening among officers in the logistics career fields.

3. Once Overbey's model becomes formally endorsed by the Air Force, a self-evaluative questionnaire, similar to the one used in this research, could be published along with a scoring key. Initial distribution of the questionnaire could be to all officers in the logistics career fields. This would allow logistics officers in all ranks to evaluate themselves against the model. Periodic publication of the model scoring questionnaire in career newsletters would maintain high visibility of the logistician career development issue and allow individuals to assess their progression over time.

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OH 45433-6583

Appendix A: Weighting Survey Package

Gen Lawrence Skantz
AFSC CC
Andrews AFB MD 20330

Dear Gen Skantz

Military logisticians play a vital role in planning and integrating our nation's defense resources to create and sustain effective combat operations. Many views exist regarding the proper background and qualifications desired of a professional military logistician to effectively fill that role. A recent study in this area produced a model of a senior military (Colonel and above) logistician's essential qualities, characteristics, and background requirements. An illustration of the model is at attachment 1. In view of your own expertise in the field of logistics, I ask you to participate in follow-on research now being conducted on this model by Captain Adelle R. Zavada, a graduate student at the Air Force Institute of Technology.

The model was developed through interviews and the use of a Delphi survey administered to selected individuals considered experts in the military logistics profession. The model's eight primary categories can be grouped into three major dimensions: (1) experience; (2) education and training; and (3) professional attributes. Experience encompasses assignments within various logistics arenas, as well as advanced positions as commander and staff officer. Education and training includes advanced academic education, professional continuing education (PCE), and professional military education (PME). Professional attributes is comprised of professional involvement in logistics organizations, technical competency in various logistics disciplines, and personal qualities and characteristics regarded as essential to the military logistician.

Though comprehensive, the model fails to emphasize any one category over another or to prioritize the components in any way. Therefore, your opinion on the relative merits of the model's elements will be extremely valuable in determining further usefulness of the model. To assist in this research, please complete the attached forms and return them in the enclosed envelope within 10 working days. In addition, your comments, suggestions, and ideas regarding the model are welcomed and encouraged. The benefit of your expertise through participation in this effort is greatly appreciated.

Jerome G. Peppers, Jr.
Professor Emeritus, Logistics
School of Systems and Logistics

2 Atch
1. The Model
2. Survey Forms (3)

COMPLETE THIS FORM FIRST

PLEASE COMPLETE AND RETURN THIS FORM

Given a total of 100 points, please allocate them among the three dimensions of the model based on your own assessment of each one's RELATIVE IMPORTANCE to the professional senior military LOGISTICIAN.

1. EXPERIENCE	_____	points
2. EDUCATION AND TRAINING	_____	points
3. PROFESSIONAL ATTRIBUTES	_____	points
TOTAL	100	points

COMMENTS:

COMPLETE THIS FORM SECOND

PLEASE COMPLETE AND RETURN THIS FORM

Given a total of 100 points for each dimension of the model, please allocate them among the categories comprising each *dimension based on your own assessment* of each one's RELATIVE CONTRIBUTION to that DIMENSION.

EXPERIENCE

1. Assignments within logistics arenas	_____	points
2. Advanced positions as commander and staff officer	_____	points
TOTAL	100	points

EDUCATION AND TRAINING

1. Advanced degree (Master or Doctorate)	_____	points
2. Professional Continuing Education (PCE)	_____	points
3. Professional Military Education (PME)	_____	points
TOTAL	100	points

PROFESSIONAL ATTRIBUTES

1. Professional involvement in logistics organizations	_____	points
2. Technical competency in various logistics disciplines	_____	points
3. Personal qualities and characteristics	_____	points
TOTAL	100	points

COMMENTS:

COMPLETE THIS FORM LAST

PLEASE COMPLETE AND RETURN THIS FORM

Given a total of 100 points for each category of the model, please allocate them among the elements comprising each category based on your own assessment of each one's RELATIVE CONTRIBUTION to that CATEGORY.

ASSIGNMENTS WITHIN LOGISTICS ARENAS

1. Retail Logistics	_____	points
2. Wholesale Logistics	_____	points
3. Combat Logistics	_____	points
4. Acquisition Logistics	_____	points
TOTAL	100	points

ADVANCED POSITIONS

1. Commander	_____	points
2. Staff Officer	_____	points
TOTAL	100	points

TECHNICAL COMPETENCY

1. Maintenance	_____	points
2. Supply	_____	points
3. Logistics Plans	_____	points
4. Transportation	_____	points
5. Procurement	_____	points
TOTAL	100	points

PROFESSIONAL INVOLVEMENT

1. Logistics Society Member	_____	points
2. Logistics Society Officer/Speaker	_____	points
3. Logistics Society Conference Attendee	_____	points
4. Logistics Society Conference Presenter/ Moderator/Panel Leader	_____	points
TOTAL	100	points

QUALITIES/CHARACTERISTICS

1. Leadership	1.	_____	points
2. Managerial Ability	2.	_____	points
3. Job Knowledge	3.	_____	points
4. Creativity	4.	_____	points
5. Dedication	5.	_____	points
6. Communicative Skills	6.	_____	points
7. Multidisciplined (in logistics areas)	7.	_____	points
8. Flexibility	8.	_____	points
9. Common Sense	9.	_____	points
TOTAL		100	points

USE REVERSE SIDE FOR COMMENTS:

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

Appendix B: Primary Survey Package 16 MAY 1986

REPLY TO ATTN OF: LS

SUBJECT: Senior Military Logistician Survey Package

TO:

1. Military logisticians play a vital role in planning and integrating our nation's defense resources to create and sustain effective combat operations. Currently, much attention is being focused on the senior military logistician.

2. You possess an Air Force Specialty Code in a logistics functional area which identifies you as a member of the Air Force logistics community. As such, information about your job experience, education and training, as well as your opinions about the logistics career field will be extremely valuable to research being conducted in this area.

3. For the results of this research to accurately reflect the Air Force logistics community, it is important that each questionnaire be completed and returned. Therefore, please take the time to complete the attached survey and return it in the enclosed envelope within ten working days.

4. All the information you provide will be strictly confidential. Your individual responses will be combined with others and will not be attributed to you personally. The data gathered will become a part of an Air Force Institute of Technology research project on senior Air Force military logisticians.

5. Your participation is completely voluntary but I would greatly appreciate your help. Thank you for your assistance.

LARRY L. SMITH, Colonel, USAF
Dean
School of Systems and Logistics

2 Atch
1. Questionnaire
2. Return Envelope

INSTRUCTIONS

1. Please answer each question directly on the questionnaire and encode your response(s) on the OPSCAN answer sheet provided using a soft (#2) pencil. Be careful to note that some questions allow you to circle more than one response, while others permit only one response. Therefore, carefully read the individual instructions for each question.

2. Questions A-G should be answered directly on the questionnaire and will not be transferred to the OPSCAN answer sheet. You may find questions A and B difficult to answer, but your responses to these questions are critical to the essence of this research. Therefore, please take the time to answer these questions as carefully and honestly as you can. Remember, there are no right or wrong answers to this questionnaire.

3. When you have completed the questionnaire and transferred questions 1-77 to the OPSCAN answer sheet, PLEASE RETURN THE ENTIRE QUESTIONNAIRE AND THE OPSCAN ANSWER SHEET IN THE ENCLOSED ENVELOPE.

4. You should be able to complete this questionnaire and the OPSCAN answer sheet in less than 45 minutes.

QUESTIONS 1-5 ARE DESIGNED TO GATHER DEMOGRAPHICAL DATA ON SURVEY RESPONDENTS.

1. Which of the following logistics AFSC's have you been awarded during your military career? (Circle all that apply)

1) 40XX MAINTENANCE
2) 60XX TRANSPORTATION
3) 64XX SUPPLY
4) 65XX CONTRACTING/MANUFACTURING
5) 66XX LOGISTICS PLANS AND PROGRAMS
6) 004X DIRECTOR OF LOGISTICS
7) 009X DEPUTY COMMANDER FOR RESOURCE MANAGEMENT

2. What is the source of your commission?

1) Air Force Academy
2) OTS/OCS
3) ROTC
4) Other

3. Have you had prior enlisted service experience ?

1) No prior service
2) Yes, under 4 years
3) Yes, over 4 years

4. Was any of your prior service experience in a logistics career field?

1) No prior service
2) Yes
3) No

5. What is your aeronautical rating?

1) Not rated
2) Pilot
3) Navigator
4) Other

QUESTIONS 6-12 RELATE TO THE LEVEL OF EXPERIENCE YOU POSSESS IN VARIOUS FUNCTIONAL AREAS. YOUR RESPONSES SHOULD INCLUDE EXPERIENCE GAINED DURING YOUR AIR FORCE CAREER INCLUDING PRIOR ENLISTED SERVICE IF APPLICABLE.

6. I have had retail logistics experience in (circle all that apply):

1) Base level maintenance
2) Base level supply
3) Base level log plans
4) Base level transportation
5) Base level procurement
6) I do not have retail logistics experience.
7) Other (specify) _____

7. I have had wholesale logistics experience in (circle all that apply):

1) Air Logistics Center
2) AFLC Career Broadening Program
3) Education With Industry
4) I do not have wholesale logistics experience
5) Other (specify) _____

8. I have had combat logistics experience in (circle all that apply):

1) Actual wartime experience (specify):
_____
2) Combat exercise participation and planning (specify)_____
3) Mobility planning
4) I do not have combat logistics experience.
5) Other (specify) _____

9. I have had acquisition logistics experience in (circle all that apply):

1) Program management in AFSC
2) Program management in AFLC
3) Program management in other MAJCOMS
4) Education with industry
5) I do not have acquisition logistics experience.
6) Other (specify) _____

10. I have had international logistics experience in (circle all that apply):

1) International Logistics Center(ILC)
2) HQ USAF Country/Program Manager
3) MAJCOM Country/Program Manager(Other than ILC)
4) Assignment to MAAG or similar in-country organization
5) I do not have international logistics experience.
6) Other (specify) _____

11. I have had staff level experience at (circle all that apply):

1) Unified Command
2) HQ USAF
3) MAJCOM
4) Numbered Air Force/Air Division
5) Wing/Base
6) I do not have staff level experience.
7) Other (specify)_____

12. My experience as a commander has been(circle all that apply):

1) I do not have experience as a commander
2) Wing Commander
3) Wing Deputy Commander Resources
4) Wing Deputy Commander Maintenance
5) Wing Deputy Commander Operations
6) Squadron, Other LOGISTICS functional area
7) Squadron, NON LOGISTICS functional area
8) Other (specify) _____

QUESTIONS 13-34 RELATE TO THE AMOUNT OF TIME YOU HAVE SPENT IN VARIOUS FUNCTIONAL AREAS. USE THE FOLLOWING KEY TO MARK YOUR RESPONSES FOR THESE QUESTIONS. (Note: Overlaps may occur in answering these questions. For example, 24 months in maintenance at the retail level should be counted as 24 months in maintenance AND 24 months in retail and so on.)

1 = NONE
2 = LESS THAN 18 MONTHS
3 = 18 - 36 MONTHS
4 = 37 - 48 MONTHS
5 = GREATER THAN 48 MONTHS

Please indicate the number of months of STAFF experience that you have had in each area.

13. Maintenance ____
14. Transportation ____
15. Supply ____
16. Logistics Planning ____
17. Procurement ____
18. Non Logistics areas____
19. Retail logistics ____
20. Wholesale logistics ____
21. Combat logistics ____
22. Acquisition logistics ____
23. International logistics ____

Please indicate the number of months you have been assigned in each of the following areas, NOT INCLUDING STAFF EXPERIENCE.

24. Maintenance ____
25. Transportation ____
26. Supply ____
27. Logistics Planning ____
28. Procurement ____
29. Non logistics areas____
30. Retail logistics ____
31. Wholesale logistics ____
32. Combat logistics ____
33. Acquisition logistics ____
34. International logistics ____

QUESTIONS 35-56 RELATE TO YOUR EDUCATIONAL BACKGROUND, TRAINING, AND PROFESSIONAL INVOLVEMENT IN LOGISTICS ORGANIZATIONS.

35. I have an advanced degree in (circle all that apply):

1) I do not have an advanced degree.
2) Masters/ Non logistics area
3) Masters/ Logistics area (AFIT)
4) Masters/ Logistics area (Other than AFIT)
5) Doctorate

For questions 36-39, please indicate the following Professional Military Education (PME) programs you have completed using the following key:

1 = Residence
2 = Seminar
3 = Correspondence
4 = Not completed

36. SOS ..... _____
37. Intermediate Service School... _____
38. Senior Service School ..... _____
39. Other PME ..... _____
(please specify)_____

40. How many Professional Continuing Education (PCE) courses related to logistics have you completed?

1) None
2) One
3) Two
4) Three
5) Four
6) Five or more

41. How many technical training courses have you completed in any of the logistics functional areas?

1) None
2) One
3) Two
4) Three
5) Four
6) Five or more

FOR QUESTIONS 42, 44, 46, 48, 50: Using the scale below, please indicate what you consider to be your level of TECHNICAL competence in the following functional areas.

1 2 3 4 5 6 7 8 9
Not Competent — Fairly Competent — Highly Competent

42. My level of competence in MAINTENANCE is: 1 2 3 4 5 6 7 8 9

1	2	3	4	5	6	7	8	9
Not Competent				Fairly Competent				Highly Competent

43. If you rated yourself OTHER THAN not technically competent in MAINTENANCE, please indicate the means through which you achieved your competence. (Circle all that apply)

1) I do not consider myself technically competent in maintenance
2) Direct job experience (working in your primary job)
3) Interactive job experience (with other organizations)
4) Association with others in the field (outside your job)
5) Technical training
6) Professional Continuing Education (PCE)
7) Professional Military Education (PME)
8) Other (specify) _____

44. My level of competence in SUPPLY is: 1 2 3 4 5 6 7 8 9

45. If you rated yourself OTHER THAN not technically competent in SUPPLY, please indicate the means through which you achieved your competence. (Circle all that apply)

1) I do not consider myself technically competent in supply
2) Direct job experience (working in your primary job)
3) Interactive job experience (with other organizations)
4) Association with others in the field (outside your job)
5) Technical training
6) Professional Continuing Education (PCE)
7) Professional Military Education (PME)
8) Other (specify) _____

46. My level of competence in TRANSPORTATION is: 1 2 3 4 5 6 7 8 9

1 2 3 4 5 6 7 8 9

Not Competent — Fairly Competent — Highly Competent

47. If you rated yourself OTHER THAN not technically competent in TRANSPORTATION, please indicate the means through which you achieved your competence. (Circle all that apply)

1) I do not consider myself technically competent in transportation.
2) Direct job experience (working in your primary job)
3) Interactive job experience (with other organizations)
4) Association with others in the field (outside your job)
5) Technical training
6) Professional Continuing Education (PCE)
7) Professional Military Education (PME)
8) Other (specify) _____

48. My level of competence in LOGISTICS PLANNING is:

1 2 3 4 5 6 7 8 9

49. If you rated yourself OTHER THAN not technically competent in LOGISTICS PLANNING, please indicate the means through which you achieved your competence. (Circle all that apply)

1) I do not consider myself technically competent in Logistics Planning.
2) Direct job experience (working in your primary job)
3) Interactive job experience (with other organizations)
4) Association with others in the field (outside your job)
5) Technical training
6) Professional Continuing Education (PCE)
7) Professional Military Education (PME)
8) Other (specify) _____

50. My level of competence in PROCUREMENT is: 1 2 3 4 5 6 7 8 9

51. If you rated yourself OTHER THAN not technically competent in PROCUREMENT, please indicate the means through which you achieved your competence. (Circle all that apply)

1) I do not consider myself technically competent in procurement.
2) Direct job experience (working in your primary job)
3) Interactive job experience (with other organizations)
4) Association with others in the field (outside your job)
5) Technical training
6) Professional Continuing Education (PCE)
7) Professional Military Education (PME)
8) Other (specify) _____

52. Are you a member of any professional organizations DIRECTLY related to logistics?(Circle all that apply)

1) I am not a member of any professional organizations directly related to logistics.
2) I am a member of Society of Logistics Engineers (SOLE)
3) I am a member of other logistics professional organizations.(specify)_____

53. Have you ever been an officer, speaker, moderator, or panel leader at any professional logistics organization function?

1) Yes
2) No

54. How often do you attend conferences, meetings, or other functions of any professional logistics organizations?

1) Very often
2) Often
3) Occasionally
4) Seldom
5) Never

55. What aspect of your background BEST prepared you to fill your current logistics position (or your most recent one if not currently assigned in logistics)? CIRCLE ONLY ONE.

1) Experience.
2) Advanced education.
3) Technical training.
4) PME.
5) Other (specify) _____

56. If you had to select the replacement for your current logistics position, what dimension of experience would you look for in that person?
    1) I am not currently filling a logistics position.
    2) Breadth of experience (i.e., experience in many logistics areas) would be more important
    3) Depth of experience (i.e., extensive experience in a particular logistics area) would be more important

QUESTIONS 57-77 ARE DESIGNED TO ELICIT YOUR OPINION ON VARIOUS ISSUES RELATED TO THE DEVELOPMENT OF THE PROFESSIONAL MILITARY LOGISTICIAN. PLEASE USE THE SCALE SHOWN HERE TO ANSWER THESE QUESTIONS.

1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree

57.	I consider myself to be a general logistician rather than a specialist in one logistics function.	1	2	3	4	5
58.	Military logisticians should possess an advanced degree.	1	2	3	4	5
59.	Do you feel military logisticians should attain an advanced degree in Logistics Management in residence at the Air Force Institute of Technology?	1	2	3	4	5
60.	Military logisticians should be active in a professional logistics society.	1	2	3	4	5
61.	Military logisticians should be multidisciplined; that is, experienced in more than one functional area of military logistics.	1	2	3	4	5
62.	Military logisticians should have experience as a commander.	1	2	3	4	5
63.	Military logisticians should have experience as a staff officer.	1	2	3	4	5
64.	There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.	1	2	3	4	5

1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree

65. The identifiable qualities and characteristics which distinguish the successful military logistician from the unsuccessful one are the same as the qualities and characteristics which distinguish any successful military officer from an unsuccessful one. 1 2 3 4 5

66. Professional military education (PME) is a valuable source of education in the area of logistics. 1 2 3 4 5

67. The Air Force should establish a specific course of education for senior directors of military logistics. 1 2 3 4 5

A senior military logistician should have had AT LEAST ONE ASSIGNMENT in:

68. Retail logistics 1 2 3 4 5

69. Wholesale logistics 1 2 3 4 5

70. Combat logistics 1 2 3 4 5

71. Acquisition logistics 1 2 3 4 5

72. International logistics 1 2 3 4 5

A senior military logistician should be TECHNICALLY COMPETENT in:

73. Transportation 1 2 3 4 5

74. Supply 1 2 3 4 5

75. Maintenance 1 2 3 4 5

76. Procurement 1 2 3 4 5

77. Logistics Planning 1 2 3 4 5

A. The following list identifies some of the qualities and characteristics frequently cited in the literature as desirable in a professional military logistician. Given 100 points, please allocate them based on YOUR OWN ASSESSMENT OF the RELATIVE DEGREE to which YOU possess any or all of these characteristics. FEEL FREE TO USE ZEROS IF APPROPRIATE.

Leadership	____
Managerial Skills	____
Job Knowledge	____
Creativity	____
Dedication	____
Communicative Skills	____
Flexibility/Adaptability	____
Common Sense	____
Multidisciplined (in the logistics fields)	____
Other (specify)_____	____
Total =	100

B. Now, please allocate another 100 points based on YOUR OWN FEELINGS of the RELATIVE IMPORTANCE of these qualities to the PROFESSIONAL MILITARY LOGISTICIAN. FEEL FREE TO USE ZEROS IF APPROPRIATE.

Leadership	____
Managerial Skills	____
Job Knowledge	____
Creativity	____
Dedication	____
Communicative Skills	____
Flexibility/Adaptability	____
Common Sense	____
Multidisciplined (in the logistics fields)	____
Other (specify) _____	____
Total =	100

C. Please describe any OTHER characteristics and qualities you think are vital to a senior military logistician.

_____

D. What is your current duty title? _____

E. What is your duty AFSC? _____ Your primary AFSC?_____

F. In which Major Command(s) have you spent the MAJORITY of your career? _____

G. What percentage(s) of your career was spent in the command(s) that you identified? _____

Appendix C: SPSSx Data Analysis Programs

```
File Handle  Loggies/Name='testdat7'
File Handle Systlog/Name ='sysdat7'
Data List    File=Loggies Fixed Records=4/
      1 ID 1-4/
      2 AFSC40 1 AFSC60 2  AFSC64 3 AFSC65 4 AFSC66 5 AFSC04 6 AFSC09 7
      Comsrce 8 Prior 9 Priorlog 10 Rating 11 Basemx 12
      Basesup 13 Baselog 14 Basetran 15 Baseproc 16 Nobase 17
      Baseoth 18 ALC 19 AFLCCB 20 EWIW 21 Nowhls 22 Whlsoth 23
      Warexp 24 Combex 25 MobPlan 26 Nocomlog 27 Comoth 28
      AFSCpmgt 29 AFLCpmgt 30 MAJpmgt 31 EWIA 32 Noacqui 33
      Acquioth 34 ILC 35 AFpmgt 36 MAJpgm 37 MAAGor 38 Nointl 39
      Intlgoth 40 Unicmd 41 HQUSAF 42 MAJCOM 43 AForAD 44
      Wing 45 Nostaff 46 Stafoth 47 Nocmder 48 WingCC 49 DCR 50
      DCM 51 DCO 52 SqCClog 53 SqCCoth 54 OtherCC 55
      Mxstaf 57 Transtaf 58 Supstaf 59 Logstaf 60 Procstaf 61
      Nologstf 62 Retstaf 63 Whlstaf 64 Cmbstaf 65 Acqstaf 66
      Ilogstaf 67 Mxexp 68 Tranexp 69 Supexp 70 Logexp 71
      Procexp 72 Othexp 73 Retexp 74 Whlsexp 75 Cmbexp 76
      Acquexp 77 Ilogexp 78
      /3 Nodeg 1 MSnonlg 2 MSAFIT 3 MSlog 4 Doc 5 SOSR 6 SOSS 7
      SOSC 8 SOSNC 9 ISSR 10 ISSS 11 ISSC 12 ISSNC 13 SSSR 14
      SSSS 15 SSSC 16 SSSNC 17 OthPMER 18 OthPMES 19 OthPMEC 20
      OthPMENC 21 PCE 22 Techtrg 23 Compmx 24 Incompmx 25
      Jobmx 26 Intrmx 27 Assmx 28 Trngmx 29 PCEmx 30 PMEmx 31
      Othmx 32 Compsup 33 Incomsup 34 Jobsup 35 Intrsup 36
      Asssup 37 Trngsup 38 PCEsup 39 PMEsup 40 Othsup 41
      Comptran 42 Incomptr 43 Jobtran 44 Intrtran 45 Asstran 46
      Trgtran 47 PCEtran 48 PMEtran 49 Othtran 50 Complog 51
      Incomlog 52 Joblog 53 Intrlog 54 Asslog 55 Trnglog 56
      PCElog 57 PMElog 58 Othlog 59 Compproc 60 Incomprc 61
      Jobproc 62 Intrproc 63 Assproc 64 Trngproc 65 PCEproc 66
      PMEproc 67 Othproc 68 Nonmem 69 Solemem 70 Othmem 71
      Profinlv 72 Profatnd 73 Bestprep 74 Replace 75 Genspec 76
      AdvDg 77 AFITDg 78 Active 79
      /4 Multid 1 Cmdexp 2 Staffexp 3 IdentQC 4 SameQC 5
      PMEval 6 Logcrs 7 Retasgn 8 Whlsasgn 9 Combasg 10
      Acquiasg 11 Ilogasgn 12 Trancomp 13 Supcomp 14 Mxcomp 15
      Proccomp 16 Logcomp 17 Primary 18 Duty 19 Command 20
Set blank=0
Missing values all (0)
Value Labels
      AFSC40 1  '40XX'/
      AFSC60 1 '60XX'/
      AFSC64 1 '64XX'/
      AFSC65 1 '65XX'/
      AFSC66 1 '66XX'/
      AFSC04 1 '004X'/
      AFSC09 1 '009X'/
      Comsrce 1 'Academy' 2 'OTS or OCS'
      3 'ROTC' 4 'Other'/
      Prior 1 'No prior service' 2 'Prior service under 4'
      3 'Prior service over 4'/
      Priorlog 1 ' No prior service'
```

```
2 ' Has logistics prior service'
3 ' Non logistics prior service'/
Rating 1 'Not rated'
2 'Pilot'
3 'Navigator'/
Basemx 1 'Base level Maintenance'/
Basesup 1 'Base level supply'/
Baselog 1 'Base level log plans'/
Basetran 1 'Base level transportation'/
Baseproc 1 'Base level procurement'/
Nobase 1 'No retail logistics experience'/
Baseoth 1 'Other retail experience'/
ALC 1 'Air Logistics Center experience'/
AFLCCB 1 'AFLC Career Broadening'/
EWIN 1 'Education with industry'/
Nowhls 1 ' No wholesale logistics experience'/
Whlsoth 1 'Other wholesale experience'/
Warexp 1 ' Actual wartime experience'/
Combex 1 'Combat exercise participation and planning'/
Mobplan 1 'Mobility planning'/
Nocomlog 1 'No combat logistics experience'/
Comoth 1 'Other Combat logistics experience'/
AFSCpmgt 1 'Program management in AFSC'/
AFLCpmgt 1 'Program management in AFLC'/
MAJpmgt 1 'Program management in other MAJCOMS'/
EWIA 1 'Education with industry'/
Noacqui 1 'No acquisition logistics experience'/
Acquioth 1 'Other acquisition logistics experience'/
ILC 1 'International Logistics Center'/
AFpmgt 1 'HQUSAF Country/Program manager'/
MAJpmgt 1 'MAJCOM country/Program manager'/
MAAGor 1 'Assignment to MAAG or in-country organization'/
Nointl 1 'No international logistics experience'/
Intlgoth 1 'Other international logistics experience'/
Unicmd 1 'Unified Command'/
HQUSAF 1 'HQUSAF'/
MAJCOM 1 'MAJCOM'/
AForAD 1 'Numbered Air Force or Air Division'/
Wing 1 'Wing/Base'/
Nostaff 1 ' No staff level experience'/
Stafoth 1 'Other staff level experience'/
Nocmder 1 'No experience as a commander'/
WingCC 1 'Wing Commander'/
DCR 1 'Wing Deputy Commander Resources'/
DCM 1 'Wing Deputy Commander Maintenance'/
DCO 1 'Wing Deputy Commander Operations'/
SqCClog 1 'Squadron Commander of other logistics area'/
SqCCoth 1 'Squadron Commander non logistics area'/
OtherCC 1 'Other commander experience'/
mxstaf to Ilogstaf 1 'None' 2 'Less than 18 months'
3 '18 to 36 months' 4 '37 to 48 months' 5 'Greater than 48 months'/
Mxexp to Ilogexp 1 'None' 2 'Less than 18 months'
3 '18 to 36 months' 4 '37 to 48 months' 5 'Greater than 48 months'/
Nodeg 1 'Noadvanced degree'/
```

```
MSnonlg 1 'Masters in a non logistics area'/
MSAFIT 1 'Masters in logistics from AFIT'/
MSlog 1 'Masters in logistics area other than AFIT'/
Doc 1 'Doctorate'/
SOSR 1 'SOS Residence'/
SOSS 1 'SOS Seminar'/
SOSC 1 'SOS Correspondence'/
SOSNC 1 'SOS not completed'/
ISSR 1 'ISS Residence'/
ISSS 1 'ISS Seminar'/
ISSC 1 'ISS Correspondence'/
ISSNC 1 'ISS not completed'/
SSSR 1 'SSS Residence'/
SSSS 1 'SSS Seminar'/
SSSC 1 'SSS Correspondence'/
SSSNC 1 'SSS not completed'/
OthPMER 1 'Other PME residence'/
OthPMES 1 'Other PME seminar'/
OthPMEC 1 'Other PME correspondence'/
OthPMENC 1 'Other PME not completed'/
PCE to Techtrg 1 'None' 2 'One' 3 'two' 4 'three'
5 'Four' 6 'Five or more'/
Compmx 1 'Not competent' 2 'Level 2' 3 'Level 3' 4 'Level 4'
5 'Fairly Competent' 6 'Level 6' 7 'Level 7' 8 'Level 8'
9 'Highly Competent'/
Incompmx 1 'Not competent in maintenance'/
Jobmx 1 'Direct Job experience'/
Intrmx 1 'Interactive job experience'/
Assmx 1 'Association with others in the field'/
Trngmx 1 'Technical training'/
PCEmx 1 'PCE'/
PMEmx 1 'PME'/
Othmx 1 'Other'/
Compsup 1 'Not competent' 2 'Level 2' 3 'Level 3' 4 'Level 4'
5 'Fairly Competent' 6 'Level 6' 7 'Level 7' 8 'Level 8'
9 'Highly Competent'/
Incomsup 1 'Not competent in supply'/
Jobsup 1 'Direct Job experience'/
Intrsup 1 'Interactive job experience'/
Asssup 1 'Association with others in the field'/
Trngsup 1 'Technical training'/
PCEsup 1 'PCE'/
PMEsup 1 'PME'/
Othsup 1 'Other'/
Comptran 1 'Not competent' 2 'Level 2' 3 'Level 3' 4 'Level 4'
5 'Fairly Competent' 6 'Level 6' 7 'Level 7' 8 'Level 8'
9 'Highly Competent'/
Incomptr 1 'Not competent in transportation'/
Jobtran 1 'Direct Job experience'/
Intrtran 1 'Interactive job experience'/
Asstran 1 'Association with others in the field'/
Trgtran 1 'Technical training'/
PCEtran 1 'PCE'/
PMEtran 1 'PME'/
```

```
      Othtran 1 'Other'/
      Complog 1 'Not competent' 2 'Level 2' 3 'Level 3' 4 'Level 4'
      5 'Fairly Competent' 6 'Level 6' 7 'Level 7' 8 'Level 8'
      9 'Highly Competent'/
      Incomlog 1 'Not competent in logistics planning'/
      Joblog 1 'Direct Job experience'/
      Intrlog 1 'Interactive job experience'/
      Asslog  1 'Association with others in the field'/
      Trnglng 1 'Technical training'/
      PCElog  1 'PCE'/
      PMElog  1 'PME'/
      Othlog  1 'Other'/
      Compproc 1 'Not competent' 2 'Level 2' 3 'Level 3' 4 'Level 4'
      5 'Fairly Competent' 6 'Level 6' 7 'Level 7' 8 'Level 8'
      9 'Highly Competent'/
      Incomprc 1 'Not competent in procurement'/
      Jobproc 1 'Direct Job experience'/
      Intrproc 1 'Interactive job experience'/
      Assproc 1 'Association with others in the field'/
      Trngproc 1 'Technical training'/
      PCEproc 1 'PCE'/
      PMEproc 1 'PME'/
      Othproc 1 'Other'/
      Nonmem 1 'Not a member'/
      Solemem 1 ' Member of SOLE'/
      Othmem 1 ' Member of other logistics Professional Association'/
      Profinlv 1 'yes' 2 'no'/
      Profatnd 1 'very often' 2 'often' 3 'occasionally'
      4 'seldom' 5 'never'/
      Bestprep 1 'experience' 2 'advanced education'
      3 'technical training' 4 'PME' 5 'other'/
      Replace 1 'Not in a logistics position currently'
      2 'Breadth of experience' 3 ' Depth of experience'/
      Genspec to Logcomp 1 'Strongly disagree' 2 'Disagree'
      3 'Neither agree nor disagree' 4 'Agree' 5 'Strongly agree'/
      Primary 1 '40XX' 2 '60XX' 3 '64XX' 4 '65XX' 5 '66XX'
      6 '004X' 7 '009X'/
      Duty 1 '40XX' 2 '60XX' 3 '64XX' 4 '65XX' 5 '66XX'
      6 '004X' 7 '009X'/
      Command 1 'SAC' 2 'TAC' 3 'MAC' 4 'AFLC' 5 'USAFE'
      6 'PACAF' 7 'ATC' 8 'AFSC' 9 'No Majority'/
Sort cases by ID
List
Save outfile = systlog
%
```

```
File handle quals/name='realdat'
File handle Systlog/name='sysdat7'
data list file=quals/ID 1-4 Ldrself 6-7 Mgrself 9-10
     JKself 12-13 Crtself 15-16 Dedself 18-19 Commself 21-22
     Flexself 24-25 CSself 27-28 Multself 30-31 Othself 33-34
     Ldrlog 36-37 Mgrlog 39-40 JKlog 42-43 Crtlog 45-46
     Dedlog 48-49 Commlog 51-52 Flexlog 54-55 CSlog 57-58
     Multlog 60-61 Otherlog 63-63
Sort cases by ID
Set blank=0
Missing values all (0)
Match files file=Systlog/file=x/By=ID/MAP

DO IF VALUE(NOBASE) EQ 0
Compute RETSCORE =53
ELSE
COMPUTE RETSCORE=0
END IF

DO IF VALUE(NOWHLS) EQ 0 OR VALUE(ILC) EQ 1
COMPUTE WHLSCORE=58
ELSE IF VALUE(NOWHLS) EQ 1 AND VALUE(ILC) EQ 0
COMPUTE WHLSCORE=0
ELSE
COMPUTE WHLSCORE=0
END IF

DO IF VALUE(NOCOMLOG) EQ 0
COMPUTE CMBSCORE =55
ELSE
COMPUTE CMBSCORE =0
END IF

DO IF VALUE(NOACQUI) EQ 0
COMPUTE AQUSCORE=62
ELSE
COMPUTE AQUSCORE =0
END IF

DO IF VALUE(NOSTAFF) EQ 0 AND VALUE(MXSTAF) GT 1 OR VALUE(TRANSTAF)
 GT 1 OR VALUE(SUPSTAF) GT 1 OR VALUE(LOGSTAF) GT 1 OR VALUE(PROCSTAF)
 GT 1 OR VALUE(RETSTAF) GT 1 OR VALUE(WHLSTAF)GT 1 OR VALUE(CMBSTAF)
 GT 1 OR VALUE(ACQSTAF)GT 1 OR VALUE(ILOGSTAF)GT 1
COMPUTE STFSCORE=80
ELSE IF VALUE(NOSTAFF)EQ 0 AND VALUE(MXSTAF)eq 1 and VALUE(TRANSTAF)
 eq 1 and VALUE(SUPSTAF)eq 1 and VALUE(LOGSTAF)eq 1 and VALUE(PROCSTAF)
 eq 1 and VALUE(RETSTAF)eq 1 and VALUE(WHLSTAF)eq 1 and VALUE(CMBSTAF)
 eq 1 and VALUE(ACQSTAF)eq 1 and VALUE(ILOGSTAF)eq 1
COMPUTE STFSCORE=0
ELSE
COMPUTE STFSCORE=0
END IF
```

```
DO IF VALUE(NOCMDER)EQ 0 AND VALUE(DCR)eq 1 or VALUE(DCM)eq 1
 or VALUE(SQCCLOG) eq 1
COMPUTE CMDSCORE = 90
ELSE If VALUE(NOCMDER)EQ 0 AND VALUE(DCR)eq 0 and VALUE(DCM)eq 0
   and VALUE(SQCCLOG) eq 0
COMPUTE   CMDSCORE =0
ELSE
COMPUTE CMDSCORE=0
END IF

DO IF VALUE(NODEG)EQ 0
COMPUTE DEGSCORE=95
ELSE
COMPUTE DEGSCORE=0
END IF

DO IF VALUE(PCE)GT 1
COMPUTE PCESCORE=73
ELSE
COMPUTE PCESCORE=0
END IF

DO IF VALUE(ISSNC)EQ 1 AND VALUE(SSSNC)EQ 1
COMPUTE PMESCORE =0
ELSE IF VALUE(ISSNC)NE 1 OR VALUE(SSSNC)NE 1
COMPUTE PMESCORE=74
ELSE
COMPUTE PMESCORE=0
END IF

DO IF VALUE(Compmx) GE 5
COMPUTE MXSCORE=39
ELSE IF VALUE(Compmx)LT 5
COMPUTE MXSCORE=0
END IF

DO IF VALUE(Compsup)GE 5
COMPUTE SUPSCORE=32
ELSE IF VALUE(Compsup)LT 5
COMPUTE SUPSCORE=0
END IF

DO IF VALUE(Complog)GE 5
COMPUTE LOGSCORE=33
ELSE IF VALUE(Complog)LT 5
COMPUTE LOGSCORE=0
END IF

DO IF VALUE(Comptran)GE 5
COMPUTE TRXSCORE=21
ELSE IF VALUE(Comptran)LT 5
COMPUTE TRXSCORE=0
END IF
```

```
DO IF VALUE(COMPPROC)GE 5
COMPUTE PRCSCORE=29
ELSE IF VALUE(Compproc)LT 5
COMPUTE PRCSCORE=0
END IF

DO IF VALUE(Nonmem)EQ 0
COMPUTE LSMSCORE=17
ELSE
COMPUTE LSMSCORE=0
END IF

DO IF VALUE(Profinlv)eq 1
COMPUTE LSISCORE=35
ELSE
COMPUTE LSISCORE=0
END IF

DO IF VALUE(Profatnd)LE 3
COMPUTE LSASCORE=10
ELSE IF VALUE(Profatnd)GT 3
COMPUTE LSASCORE=0
ELSE
COMPUTE LSASCORE=0
END IF

DO If VALUE(Ldrself)GE 10
COMPUTE LDRSCORE=26
ELSE
COMPUTE LDRSCORE =0
END IF

DO IF VALUE(MGRSELF)GE 10
COMPUTE MGRSCORE=17
ELSE
COMPUTE MGRSCORE=0
END IF

DO IF VALUE(JKself)GE 10
COMPUTE JKSCORE=19
ELSE
COMPUTE JKSCORE=0
END IF

DO IF VALUE(Crtself)GE 10
COMPUTE CRTSCORE=12
ELSE
COMPUTE CRTSCORE=0
END IF

DO IF VALUE(Dedself)GE 10
COMPUTE DEDSCORE=12
ELSE
```

```
COMPUTE DEDSCORE=0
END IF

DO IF VALUE(Commself)GE 10
COMPUTE COMSCORE=14
ELSE
COMPUTE COMSCORE=0
END IF

DO IF VALUE(Flexself)GE 10
COMPUTE FLXSCORE=11
ELSE
COMPUTE FLXSCORE=0
END IF

DO IF VALUE(CSself)GE 10
COMPUTE CSSCORE=18
ELSE
COMPUTE CSSCORE=0
END IF

DO IF VALUE(Multself)GE 10
COMPUTE MLTSCORE=15
ELSE
COMPUTE MLTSCORE=0
END IF

Compute EXPscore = VALUE(RETSCORE)+VALUE(WHLSCORE)+VALUE(CMESCORE)+
  Value(AQUSCORE)+VALUE(STFSCORE)+VALUE(CMDSCORE)
Compute EDscore= VALUE(DEGSCORE)+VALUE(PCESCORE)+VALUE(PMESCORE)
Compute PFAscore= VALUE(MXSCORE)+VALUE(SUPSCORE)+VALUE(LOGSCORE)+
  VALUE(TRXSCORE)+VALUE(PRCSCORE)+VALUE(LSMSCORE)+VALUE(LSISCORE)+
  VALUE(LSASCORE)+VALUE(LDRSCORE)+VALUE(MGRSCORE)+VALUE(JKSCORE)+
  VALUE(CRTSCORE)+VALUE(FLXSCORE)+VALUE(DEDSCORE)+VALUE(COMSCORE)+
  VALUE(CSSCORE)+VALUE(MLTSCORE)
COMPUTE Modscore=VALUE(EXPscore)+VALUE(EDscore)+VALUE(PFAscore)
```

Appendix D: Mean Model and Dimension Scores by Primary and Duty AFSC

TABLE D.1

Model Scores by Duty AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	68.4	11.4	67.5	148
CL	72.4	10.2		84
NCL	63.2	10.8		64
60XX TOTAL	69.7	10.4	69.2	37
CL	71.4	9.4		31
NCL	61.2	12.4		6
64XX TOTAL	66.9	10.8	65.5	43
CL	68.9	8.9		39
NCL	47.9	9.6		4
65XX TOTAL	63.8	11.7	63.5	61
CL	65.3	11.3		41
NCL	60.9	12.1		20
66XX TOTAL	73.3	12.8	69.0	9
CL	77.3	11.5		7
NCL	59.0	8.5		2
0046 TOTAL	70.1	12.1	70.1	162
CL	73.3	11.2		109
NCL	63.4	11.2		53
0096 TOTAL	61.8	14.2	63.4	66
CL	71.4	13.3		24
NCL	56.3	11.6		42
Other TOTAL	58.7	12.8	58.5	134
CL	61.2	11.3		31
NCL	60.0	13.3		103

CL = Career Logistician
NCL = Non Career Logistician

TABLE D.2

Model Scores by Primary AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	67.7	12.3	67.3	127
CL	73.4	10.4		65
NCL	61.8	11.4		62
60XX TOTAL	68.8	12.1	69.1	25
CL	72.4	10.0		20
NCL	54.1	8.2		5
64XX TOTAL	66.2	12.0	69.1	31
CL	70.1	9.1		25
NCL	50.0	8.7		6
65XX TOTAL	63.7	12.0	63.3	64
CL	65.9	11.9		42
NCL	59.5	11.4		22
66XX TOTAL	68.0	10.3	70.6	7
CL	72.4	10.7		4
NCL	62.1	7.6		3
0046 TOTAL	68.7	12.4	68.7	201
CL	72.6	10.7		119
NCL	63.1	12.6		82
0096 TOTAL	60.4	13.3	61.4	91
CL	67.4	11.6		37
NCL	55.6	12.2		54
Other TOTAL	63.0	13.1	61.4	114
CL	67.0	13.0		54
NCL	59.5	12.2		60

TABLE D.3

Experience Scores by Duty AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	30.4	6.4	32.2	150
CL	33.3	5.3		85
NCL	26.7	5.8		65
60XX TOTAL	28.7	6.6	27.8	37
CL	29.7	5.8		31
NCL	24.1	8.8		6
64XX TOTAL	30.8	6.7	33.6	43
CL	32.1	5.5		39
NCL	18.3	4.6		4
65XX TOTAL	22.4	8.4	20.0	61
CL	23.4	8.1		41
NCL	20.4	9.0		20
66XX TOTAL	29.6	5.6	30.8	10
CL	31.2	5.3		7
NCL	23.9	2.3		3
0046 TOTAL	30.7	6.7	30.8	162
CL	32.7	5.6		109
NCL	26.8	7.0		53
0096 TOTAL	27.1	7.6	27.8	67
CL	32.6	7.7		24
NCL	24.0	5.6		43
Other TOTAL	24.2	7.5	22.3	141
CL	25.4	6.7		33
NCL	23.8	7.6		108

TABLE D.4

Experience Scores by Primary AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	29.4	6.7	27.8	128
CL	33.1	5.0		65
NCL	25.6	6.0		63
60XX TOTAL	27.4	7.4	27.8	25
CL	29.0	6.1		20
NCL	21.1	9.5		5
64XX TOTAL	29.7	7.5	30.8	31
CL	32.5	4.9		25
NCL	18.1	4.6		6
65XX TOTAL	22.4	8.8	21.6	64
CL	23.9	8.3		42
NCL	19.7	9.2		22
66XX TOTAL	27.1	6.5	25.3	8
CL	30.1	7.5		4
NCL	23.3	1.7		4
0046 TOTAL	30.5	7.2	30.8	204
CL	33.0	5.7		120
NCL	26.8	7.7		84
0096 TOTAL	25.9	6.9	25.3	94
CL	30.1	6.7		38
NCL	23.1	5.5		56
Other TOTAL	26.9	7.6	27.8	117
CL	29.0	7.6		55
NCL	25.1	7.2		62

TABLE D.5

Education/Training Scores by Duty AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	17.8	5.6	16.9	150
CL	18.4	5.4		85
NCL	17.0	5.9		65
60XX TOTAL	19.9	4.5	16.9	37
CL	20.4	4.6		31
NCL	17.4	3.5		6
64XX TOTAL	17.8	5.8	16.9	43
CL	18.1	5.8		39
NCL	14.5	4.8		4
65XX TOTAL	21.9	3.8	24.2	61
CL	22.4	3.3		41
NCL	21.2	4.7		20
66XX TOTAL	19.9	4.1	16.9	10
CL	20.8	4.4		7
NCL	16.9	0.0		3
0046 TOTAL	18.0	5.5	16.9	162
CL	18.6	5.3		109
NCL	16.7	5.8		53
0096 TOTAL	16.5	6.0	16.9	67
CL	18.2	6.1		24
NCL	15.5	5.8		43
Other TOTAL	17.3	5.6	16.9	141
CL	18.8	4.5		33
NCL	16.9	5.9		108

TABLE D.6

Education/Training Scores by Primary AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	18.0	5.9	16.9	128
CL	19.0	5.3		65
NCL	17.1	6.3		63
60XX TOTAL	21.3	4.0	24.2	25
CL	22.7	3.0		20
NCL	15.5	1.2		5
64XX TOTAL	17.9	5.8	16.9	31
CL	18.2	6.0		25
NCL	16.5	5.4		6
65XX TOTAL	22.0	3.4	24.2	64
CL	22.4	3.3		42
NCL	21.2	3.7		22
66XX TOTAL	18.9	3.6	16.9	8
CL	18.7	3.7		4
NCL	19.3	4.2		4
0046 TOTAL	17.4	5.4	16.9	204
CL	17.9	5.4		120
NCL	16.6	5.4		84
0096 TOTAL	17.0	5.8	16.9	94
CL	18.4	5.6		38
NCL	16.0	5.8		56
Other TOTAL	17.6	5.6	16.9	117
CL	18.7	4.8		55
NCL	16.7	6.2		62

TABLE D.8

Professional Attributes Scores by Duty AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	20.2	5.6	19.8	148
CL	20.7	5.3		84
NCL	19.4	6.0		64
60XX TOTAL	21.1	5.7	20.0	37
CL	21.3	5.6		31
NCL	19.7	6.4		6
64XX TOTAL	18.3	5.9	17.8	43
CL	18.6	6.0		39
NCL	15.1	3.9		4
65XX TOTAL	19.4	5.6	19.7	61
CL	19.5	5.2		41
NCL	19.2	6.4		20
66XX TOTAL	23.7	5.0	23.7	9
CL	25.3	4.3		7
NCL	18.2	3.1		2
0046 TOTAL	21.3	5.5	21.5	162
CL	22.0	5.6		109
NCL	19.9	5.1		53
0096 TOTAL	18.1	6.3	18.9	66
CL	20.6	5.4		24
NCL	16.7	6.4		42
Other TOTAL	17.3	5.8	16.8	134
CL	17.2	5.0		31
NCL	17.4	6.0		103

TABLE D.9

Professional Attributes Scores by Primary AFSC

	Mean	Std. Dev.	Median	No. Cases
40XX TOTAL	20.2	5.7	20.4	127
CL	21.3	5.2		65
NCL	19.1	6.0		62
60XX TOTAL	20.0	5.1	19.0	25
CL	20.7	5.4		20
NCL	17.4	2.2		5
64XX TOTAL	18.6	6.6	17.7	31
CL	19.4	6.8		25
NCL	15.4	4.9		6
65XX TOTAL	19.3	5.2	19.7	64
CL	19.7	5.3		42
NCL	18.6	5.1		22
66XX TOTAL	21.8	2.9	21.3	7
CL	23.6	1.8		4
NCL	19.4	2.3		3
0046 TOTAL	21.0	5.8	21.2	201
CL	21.7	5.6		119
NCL	19.8	6.0		82
0096 TOTAL	17.4	6.3	16.9	91
CL	18.5	5.7		37
NCL	16.6	6.6		54
Other TOTAL	18.4	6.0	17.7	114
CL	19.5	5.9		54
NCL	17.5	6.0		60

Appendix E: Mean Likert Scale Responses for Model Criteria Questions by Duty and Primary AFSCs

TABLE E.1

Topic: Advanced Degree

Question 58	Mean	No. Cases
Population	3.6	671
CL	3.7	369
NCL	3.5	301
Duty AFSC		
40XX	3.3	150
60XX	3.2	37
64XX	3.3	43
65XX	3.9	61
66XX	4.2	9
0046	3.7	162
0096	3.6	67
Other	3.5	142
Primary AFSC		
40XX	3.4	128
60XX	3.9	25
64XX	3.6	31
65XX	3.9	64
66XX	3.7	7
0046	3.7	204
0096	3.7	94
Other	3.6	117

TABLE E.2

Topic: AFIT Degree

Question 59	Mean	No. Cases
Population	3.0	671
CL	3.0	369
NCL	3.1	301
Duty AFSC		
40XX	2.8	150
60XX	3.0	37
64XX	2.7	43
65XX	3.1	61
66XX	3.6	9
0046	3.2	162
0096	3.1	67
Other	3.1	142
Primary AFSC		
40XX	3.0	128
60XX	2.9	25
64XX	2.9	31
65XX	3.1	64
66XX	3.1	7
0046	3.1	204
0096	3.1	94
Other	3.0	117

TABLE E.3

Topic: Professional Involvement

Question 60 Question 60	Mean	No. Cases
Population	3.3	671
CL	3.3	369
NCL	3.2	301
Duty AFSC		
40XX	3.2	150
60XX	3.7	37
64XX	3.1	43
65XX	3.7	61
66XX	3.4	9
0046	3.3	162
0096	3.2	67
Other	3.2	142
Primary AFSC		
40XX	3.2	128
60XX	3.7	25
64XX	3.3	31
65XX	3.7	64
66XX	3.1	7
0046	3.3	204
0096	3.1	94
Other	3.2	117

TABLE E.4

Topic: Multidisciplined

Question 61	Mean	No. Cases
Population	4.1	671
CL	4.1	369
NCL	4.2	301
Duty AFSC		
40XX	3.9	150
60XX	3.9	37
64XX	3.8	43
65XX	3.8	61
66XX	4.9	9
0046	4.3	162
0096	4.4	67
Other	4.2	142
Primary AFSC		
40XX	3.9	128
60XX	3.8	25
64XX	4.0	31
65XX	3.8	64
66XX	4.1	7
0046	4.3	204
0096	4.3	94
Other	4.2	117

TABLE E.5

Topic: Command Experience

Question 62	Mean	No. Cases
Population	4.2	671
CL	4.2	369
NCL	4.2	301
Duty AFSC		
40XX	4.4	150
60XX	4.5	37
64XX	4.4	43
65XX	3.7	61
66XX	4.1	9
0046	4.2	162
0096	4.2	67
Other	4.1	142
Primary AFSC		
40XX	4.4	128
60XX	4.5	25
64XX	4.5	31
65XX	3.7	64
66XX	4.0	7
0046	4.3	204
0096	4.3	94
Other	4.1	117

TABLE E.6

Topic: Staff Experience

Question 63	Mean	No. Cases
Population	4.4	671
CL	4.5	369
NCL	4.4	301
Duty AFSC		
40XX	4.5	150
60XX	4.6	37
64XX	4.4	43
65XX	3.7	61
66XX	4.6	9
0046	4.5	162
0096	4.4	67
Other	4.3	142
Primary AFSC		
40XX	4.4	128
60XX	4.8	25
64XX	4.5	31
65XX	4.2	64
66XX	4.3	7
0046	4.5	204
0096	4.4	94
Other	4.4	117

TABLE E.7

Topic: Identifiable Qualities

Question 64	Mean	No. Cases
Population	4.0	671
CL	4.1	369
NCL	3.9	301
Duty AFSC		
40XX	4.2	150
60XX	4.0	37
64XX	4.0	43
65XX	3.9	61
66XX	4.4	9
0046	4.1	162
0096	4.0	67
Other	3.9	142
Primary AFSC		
40XX	4.1	128
60XX	4.0	25
64XX	4.2	31
65XX	3.8	64
66XX	4.0	7
0046	4.1	204
0096	3.8	94
Other	3.9	117

TABLE E.8

Topic: Same Identifiable Qualities

Question 65	Mean	No. Cases
Population	4.1	671
CL	4.1	369
NCL	4.2	301
Duty AFSC		
40XX	4.1	150
60XX	4.1	37
64XX	4.0	43
65XX	4.1	61
66XX	4.1	9
0046	4.2	162
0096	4.1	67
Other	4.2	142
Primary AFSC		
40XX	4.1	128
60XX	4.0	25
64XX	4.2	31
65XX	4.0	64
66XX	4.0	7
0046	4.2	204
0096	4.1	94
Other	4.2	117

TABLE E.9

Topic: PME

Question 66	Mean	No. Cases
Population	3.3	671
CL	3.3	369
NCL	3.4	301
Duty AFSC		
40XX	3.2	150
60XX	3.6	37
64XX	3.1	43
65XX	3.6	61
66XX	3.1	9
0046	3.3	162
0096	3.4	67
Other	3.3	142
Primary AFSC		
40XX	3.3	128
60XX	3.7	25
64XX	3.4	31
65XX	3.6	64
66XX	3.3	7
0046	3.3	204
0096	3.4	94
Other	3.2	117

TABLE E.10

Topic: Continuing Education

Question 67	Mean	No. Cases
Population	3.8	671
CL	3.7	369
NCL	3.9	301
Duty AFSC		
40XX	3.8	150
60XX	3.8	37
64XX	3.6	43
65XX	3.5	61
66XX	4.1	9
0046	3.9	162
0096	3.6	67
Other	3.5	142
Primary AFSC		
40XX	3.9	128
60XX	4.2	25
64XX	3.9	31
65XX	3.7	64
66XX	3.6	7
0046	3.7	204
0096	3.9	94
Other	3.7	117

TABLE E.11

Topic: Retail Logistics Assignment

Question 68	Mean	No. Cases
Population	4.1	671
CL	4.4	369
NCL	3.8	301
Duty AFSC		
40XX	4.2	150
60XX	4.1	37
64XX	4.5	43
65XX	3.6	61
66XX	4.6	9
0046	4.5	162
0096	4.0	67
Other	3.6	142
Primary AFSC		
40XX	4.2	128
60XX	4.1	25
64XX	4.4	31
65XX	3.6	64
66XX	4.4	7
0046	4.3	204
0096	4.0	94
Other	3.8	117

TABLE E.12

Topic: Wholesale Logistics Assignment

Question 69	Mean	No. Cases
Population	3.9	671
CL	4.2	369
NCL	3.6	301
Duty AFSC		
40XX	4.0	150
60XX	3.9	37
64XX	4.3	43
65XX	3.7	61
66XX	4.3	9
0046	4.3	162
0096	3.7	67
Other	3.5	142
Primary AFSC		
40XX	4.0	128
60XX	3.9	25
64XX	4.3	31
65XX	3.8	64
66XX	4.1	7
0046	4.1	204
0096	3.7	94
Other	3.7	117

TABLE E.13

Topic: Combat Logistics Assignment

Question 70	Mean	No. Cases
Population	3.7	671
CL	3.9	369
NCL	3.5	301
Duty AFSC		
40XX	3.7	150
60XX	4.2	37
64XX	3.6	43
65XX	3.5	61
66XX	3.8	9
0046	3.9	162
0096	3.6	67
Other	3.4	142
Primary AFSC		
40XX	3.7	128
60XX	4.2	25
64XX	3.7	31
65XX	3.5	64
66XX	4.0	7
0046	3.8	204
0096	3.5	94
Other	3.6	117

TABLE E.14

Topic: Acquisition Logistics Assignment

Question 71	Mean	No. Cases
Population	3.5	671
CL	3.6	369
NCL	3.5	301
Duty AFSC		
40XX	3.4	150
60XX	3.4	37
64XX	3.5	43
65XX	3.8	61
66XX	3.9	9
0046	3.7	162
0096	3.4	67
Other	3.5	142
Primary AFSC		
40XX	3.5	128
60XX	3.4	25
64XX	3.6	31
65XX	3.8	64
66XX	3.6	7
0046	3.7	204
0096	3.3	94
Other	3.4	117

TABLE E.15

Topic: International Logistics Assignment

Question 72	Mean	No. Cases
Population	3.1	671
CL	3.1	369
NCL	3.0	301
Duty AFSC		
40XX	2.9	150
60XX	3.4	37
64XX	3.9	43
65XX	3.2	61
66XX	3.3	9
0046	3.2	162
0096	3.0	67
Other	3.1	142
Primary AFSC		
40XX	3.0	128
60XX	3.4	25
64XX	3.2	31
65XX	3.3	64
66XX	3.1	7
0046	3.2	204
0096	3.0	94
Other	3.0	117

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UNITED STATES AIR (U) AIR FORCE INST OF TECH
WRIGHT-PATTERSON AFB OH SCHOOL OF SYST A R ZAVADA
UNCLASSIFIED SEP 86 AFIT/LS/GMM-86S-92 F/G 5/9 NL

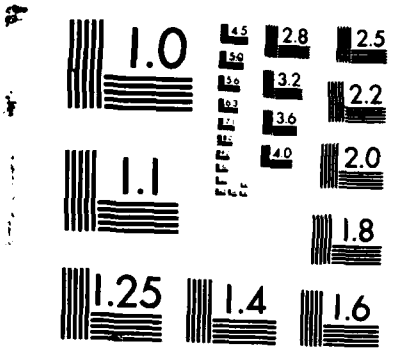

TABLE E.16

Topic: Technical Competency in Transportation

Question 73	Mean	No. Cases
Population	3.3	671
CL	3.4	369
NCL	3.3	301
Duty AFSC		
40XX	3.3	150
60XX	3.8	37
64XX	3.6	43
65XX	3.3	61
66XX	3.3	9
0046	3.3	162
0096	3.3	67
Other	3.2	142
Primary AFSC		
40XX	3.3	128
60XX	3.8	25
64XX	3.5	31
65XX	3.3	64
66XX	3.3	7
0046	3.3	204
0096	3.3	94
Other	3.4	117

TABLE E.17

Topic: Technical Competence in Supply

Question 74	Mean	No. Cases
Population	3.6	671
CL	3.7	369
NCL	3.5	301
Duty AFSC		
40XX	3.7	150
60XX	3.5	37
64XX	3.9	43
65XX	3.5	61
66XX	3.7	9
0046	3.8	162
0096	3.5	67
Other	3.4	142
Primary AFSC		
40XX	3.8	128
60XX	3.4	25
64XX	3.8	31
65XX	3.5	64
66XX	3.4	7
0046	3.7	204
0096	3.5	94
Other	3.6	117

TABLE E.18

Topic: Technical Competence in Maintenance

Question 75	Mean	No. Cases
Population	3.7	671
CL	3.7	369
NCL	3.6	301
Duty AFSC		
40XX	4.0	150
60XX	3.2	37
64XX	3.7	43
65XX	3.5	61
66XX	3.8	9
0046	3.9	162
0096	3.4	67
Other	3.5	142
Primary AFSC		
40XX	4.1	128
60XX	3.0	25
64XX	3.6	31
65XX	3.5	64
66XX	3.6	7
0046	3.8	204
0096	3.4	94
Other	3.6	117

TABLE E.19

Topic: Technical Competence Procurement

Question 76	Mean	No. Cases
Population	3.4	671
CL	3.4	369
NCL	3.4	301
Duty AFSC		
40XX	3.4	150
60XX	3.4	37
64XX	3.4	43
65XX	3.6	61
66XX	3.3	9
0046	3.4	162
0096	3.4	67
Other	3.3	142
Primary AFSC		
40XX	3.4	128
60XX	3.3	25
64XX	3.3	31
65XX	3.6	64
66XX	3.3	7
0046	3.4	204
0096	3.4	94
Other	3.4	117

TABLE E.20

Topic: Technical Competence in Logistics Planning

Question 77	Mean	No. Cases
Population	3.7	671
CL	3.7	369
NCL	3.6	301
Duty AFSC		
40XX	3.6	150
60XX	3.8	37
64XX	3.6	43
65XX	3.5	61
66XX	4.1	9
0046	3.9	162
0096	3.6	67
Other	3.5	142
Primary AFSC		
40XX	3.6	128
60XX	3.9	25
64XX	3.6	31
65XX	3.6	64
66XX	3.6	7
0046	3.8	204
0096	3.5	94
Other	3.6	117

Appendix F: Weighting Survey Comments

The supplemental survey was used to obtain weightings for the components of Overbey's model. The following comments were made by the participants of that weighting exercise.

Active Duty Air Force General

Actual "hands on" experience, which directly influences the professional attributes of technical competency and job knowledge, far outweighs educational and professional involvement factors.

Again, the "perfect" logistician would have hands on experience blended with formal and continued education. We need to ensure individuals have sufficient technical (multi-disciplined) logistics experience prior to assignment to senior positions and maintenance experience is almost mandatory.

Active Duty Air Force General

Education builds the foundation but experience and personal leadership qualities create the competent, effective logistician. Above the major/GM-13 level, they are without question the only factors that separate true loggies from individual specialists.

I have a problem with the [assignments in logistics arenas] breakout. In my view the breakout should be -- peacetime logisitics (retail/wholesale) 40, combat logistics (retail, wholesale) 40, acquisition logistics 20. The breakout is the essence of the loggie business.

Active Duty Air Force Major General

There is no substitute for experience! Likewise, the professional attributes one brings to any job is paramount. One Comment [regarding technical competency]: If one could do all the logistics jobs during the first 15-18 years (maintenance, supply, transportation, log plans, procurement) -- what a full colonel/general officer candidate we would have -- that is, if he/she possessed all the other [professional] attributes.

Active Duty Air Force Major General

I don't rate professional involvement very high in essential qualities.

Active Duty Air Force Major General

Although education and training is critical, as a logistician, one must be capable to be reactive (and proactive) to the many and changing scenarios. You use all your experience to good use!

Technical competency is gained through varied experience and education.

Active Duty Air Force Colonel

Experience dimension is too narrowly framed. A logistician's experience is enhanced when he understands operations as well.

Active Duty Air Force Colonel

I really think that these dimensions of the model have to be rated equally. If we want someone to be part of planning and integrating our nation's defense resources to create and sustain effective combat operations, the person must have logistics experience and should have had worked at a MAJCOM/Air Staff level assignment (somewhere where he/she would have had to put commands and units inputs together for the best interest of our nation). If this person didn't have an advance level of education he/she wouldn't get the opportunity to be a senior officer. If the officer didn't have technical competency, personal qualities and characteristics he/she wouldn't be of any benefit in this tasking.

Experience: I think that a positions at the Air Staff would be important for a person that would be planning and integrating our nation's defense resources.

Education and training: a master's degree is extremely important -- the more people we get through AFIT the better. But I think the key element is PCE. We really don't do enough PCE - we do a poor job in the mid-range to senior officer level. We could do more 2-3 day workshops and seminars, we could put out 2-3 page papers (anything to keep people constantly in the education business). I think that the PME process is improving. I really can't say that I benefited from my PME experience other than filling squares - but chapters, articles I've read and the seminars I've attended indicate that it is better now.

Professional attributes: Professional involvement -- many of us are members and really don't do much beyond that. Assignments within logistics arenas: I wanted to put combat logistics first, but really one arena is as important as the other. What if we tried to do defense planning without acquisition. I really wouldn't/couldn't make inputs concerning acquisition (might be an area for short papers - try to make more people smarter in the business).

Advanced positions: Having command experience is valuable but being a staff officer at the Air Staff level would probably be more beneficial for a role in planning and integrating our nation's defense resources to create and sustain effective combat operations.

Technical competency: Again, I wanted to put logistics plans first, but couldn't. If I had to make the logistics decision for the nation, I would make sure I had a good supply and procurement person. I would also want someone who had current maintenance experience, and we always want to make transportation decisions - and we aren't qualified. So all five are important. We also would have to be ready to call in any other specialty if needed - we complain that operations leaves us out in their planning. We probably should include them in any discussions concerning bed down, etc.

Professional Involvement: Just being a member of an organization is really not enough -- and most of us are just members. If nothing else we can learn from being a member. Unfortunately we don't do much of that either - we don't even read all the articles.

Qualities/Characteristics: Really tough - hard to divide the points between characteristics of leadership and management. Would have preferred to discuss what characteristics are more important (it still would be tough). I'm not sure I would ever be comfortable trying to differentiate between leadership and management. Leadership seems to be getting most of the print/discussion at my present location. But, I don't think I can be a good leader without being a good manager (if we say a manager manages things - i.e., funds/resources). I have been fairly successful in my current role as a commander and one of the reasons is I have managed/lead my resources/funds manager well. To make it more confusing for me - the biggest problem my resource manager has it dealing with people. Anyway, the characteristics of leadership/management. I really think that communicative skills are the most important. A leader needs to express what he/she is; what he/she wants or doesn't want; how he/she operates; etc, etc. Without communication, a leader will be lucky if he/she is successful. Common sense is also critical. I'm really amazed at the number of "leaders" I see today that don't have much or any common sense. At times we even award people who follow directions well but lack common sense. Job knowledge is really important in the logistics business. We need to be more multi-disciplined (we should be made to move around the logistics business). General Marquez says we could learn to be a civil engineer in six months - boy, the civil engineer shakes in his bulldozer. But if we did this and then keep and promote our own we would be in better shape. We need to train the people that come into logistics - particularly the

senior people. Just because they get promoted they don't have instant knowledge. Easy to say - but hard to make happen I know. I could go on and on as could many people on the characteristics (may be worth a study in itself - the most desirable characteristics of military professional/ leader). Seems to me we have discussed this many times.

DOD Civilian, Senior Executive Service

[The advanced degree] should be a real degree -- not a night school quickie.

[Qualities/characteristics] is by far the most important.

DOD Civilian, Senior Executive Service

Don't know what [combat logistics] means.
Some of the qualities overlap.

Civilian, Academic

Technical competency in dimension III is primarily dependent on education and training and experience.

This point system does not account for interdependencies among [both the dimensions and categories]. Current research has defined methods for evaluation of interactions which can be used in the model depicted here. Some evaluation needs to be made on the degree of dependency of each category on the others.

Assignments within logistics: These are not mutually exclusive -- therefore introduce major errors in application. It might make much more sense to identify phases of the system life cycle and identify respective relative importance. Further -- the use of retail and wholesale needs to be defined -- at least for me.
General: The weights assigned to each category will vary with the purpose of the model. For instance an industrial manager will not need as much of some categories as will a military commander. This means that the model should be applied with care.

Technical competency: Without further information cannot discriminate in importance of categories. Each area of application will have different weights.

Civilian, Academic

Your model is limited in thee technical competency sub-area. Surely, there are more specific areas in logistics than the five listed. The qualities/characteristics section was most difficult to answer. Each is highly important, but somewhat difficult to prioritize.

Civilian, Business

In professional involvement, I would add Certified Professional Logistician as an element.

Retired Air Force General

Surprised that the model did not include key wing level [staff] jobs -- that's where the action is and where you learn logistics.

Leadership includes managerial ability, creativity, dedication, communicative skills, flexibility and common sense.

Retired Army Lieutenant General

Education and training are important. Professional attributes are necessary, but experience makes the senior military logistician.

Retired Navy Rear Admiral

Creativity, dedication, flexibility and common sense come with leadership.

Retired Air Force Major General

The senior military logistician, if he is a dedicated individual with the professional attributes of leadership and knowledge/experience and training will acquire through effort all other facets that make a good senior logistician.

Retired Army Colonel

There is no substitute for real hard core logistics experience. It is much harder to receive than education and training. Education and training is often perceived as being absolutely critical to the baseline of future development. This is true but where there is a choice of real experience or formal education/training, field experience is really the name of the game. Unfortunately progression/promotion gates don't open for the young officer unless he has the education/training baseline. However, from my 30+ years experience, I've noted the most qualified/valuable is the one with excessive real field experience in contrast to the one that has the certificate/degree/advanced degree but who has failed to receive that one or two critical hands on experience opportunity (ies).

Retired USAF Colonel

If [experience] was [listed as] "successful" experience, I would give it 100 points.

Under experience, staff officer could be considered within the logistics arenas (i.e., a chief of maintenance is staff to the commander).

There are more colonels and generals in [wholesale logistics]. [Technical competency] in the integrated management of technical areas is logistics.

[Professional involvement] is good for promotion only. If you know your job and have common sense you can make it to "Sr. Logistician -- First Class".

Advanced positions -- a commander position does not increase your technical competency.

Retired Air Force Colonel

I believe the title logistician is too broad to properly scale the attributes. The senior operational logistician (combat) has very different requirements from the wholesale logistics manager. The acquisition logistics manager is separate from all the others. The model is sort of asking "what are the attributes of an Air Force officer?", as if they were all the same. I suggest a shred out of at least three categories listed above.

Retired Air Force Colonel

I base these scores on the old adage that "experience is the best teacher" which I found to be true in my military career. Professional attributes are also important especially in regards to involvement. Technical competency also helps which has been mostly through experience on the job over the years.

I have always felt that operational assignments for the senior logistics officer were more important than MAJCOM or Air Staff. This includes assignments to AFLC depots which I still consider operational. These assignments are "where it is at" type of logistics and provide the greatest challenge -- yet the most "risk" in one's career.

PME provides the "professional attributes", but the advanced degree and PCE supplies the tools to do the job effectively.

I recommend retail and combat logistics over staff. In this question, I consider wholesale logistics as an assignment to an AFLC depot which in a manner is still operational.

In regards to technical competency, my career was in aircraft maintenance and logistics plans which makes my answer a bit biased.

[Qualities/characteristics] does not provide enough latitude for spreading the points. Suggest either less choices or more points. All of these attributes are essential to a successful career in this critical area, but with nine choices and 100 points it is difficult to establish a clear distinction.

Retired Air Force Colonel

From forty years experience (30 in uniform, 10 as civilian) I rate dedication to the Air Force and motivation as the highest attributes a senior military logistician should have -- or work for. Regretably, too many are motivated by self interests (promotion, assignments, applause).

Retired Air Force Colonel

There is no substitute for experience. Of the qualities and characteristic which are grouped in the experience mode -- none is as important as are common sense and leadership. Professional attributes must rank with experience. Only a dedicated professional can and will apply knowledge and experience to achieve the most effective results. Assuming intelligence and common sense, experience is the greatest teacher for the log officer or for that matter any one!

No substitute *for experience* -- *if properly* applied, money, time and people are saved. An interesting study effort would be to research how many times the Air Force has reinvented the wheel during its short history.

I have little faith in PME as it was handled during my career. It failed to apply experience to new situations. Logistics assignments -- Combat logistics has to rate as the most important. It brings forth all of the requisites of a good log officer and successful combat is the payoff. I include in combat logistics, the log planning aspects needed to sustain the area (theatre) combat operations.

Acquisition logistics must be performed in a much better manner than has been the case in the past.

I would be interested to know if you differentiate between procurement and acquisition, and if so, in what manner. In my last assignment, I established an acquisition logistics division with the responsibility for procuring all new systems for the AFTAC. It was successful in reducing costs and in reducing time.

Retired Air Force Colonel

I gave the model considerable thought. The end result was considerable balance throughout all three dimensions.

Retired Air Force Colonel

I have completed the forms to the best of my ability. However, my reaction is that you are trying to be too finite about intangible factors. The primary measure of professional merit (in any field) is performance, i.e., what has an individual accomplished and has he or she satisfied the mandatory requirements (such as satisfying or bettering the criteria on which performance is judged?

In my opinion, performance is measured on the factors listed under "qualities/characteristics" and "technical competency". The other factors are important, but only because they feed those above. I have a different view of the model.

As you will see from my model, I have a different view of how categories should be grouped under the three major dimensions. I think job knowledge is a major component of technical competency and multidisciplined is a modifier of job knowledge; so I put them in the descriptive heading of that block. Other minor adjustments are as shown on my version. The principle difference is the process orientation.

Appendix G: Primary Survey Comments

The following comments were made by respondents to the primary survey. The comments were grouped by rating and AFSC to provide some insight into the backgrounds of officers who made the comments.

NON RATED OFFICERS' COMMENTS:

AFSC 40XX: Can an RM be a DCM as easily as a DCM can be an RM? Or transporter, or any others [in the logistics AFSCs]? Opinion: Generalization -- No, a totally different world exists on the flightline and I believe the senior maintenance manager (who has come up through maintenance) has a more general experience base that fits readily in the broad term "logistician". So what! I believe more 40XX troops are career broadened into other logistics areas, than vice versa. Point: Force it the other way to "season" as many as possible in the ways of those who "live and die" by the logistics community support, long range and day to day.

AFSC 40XX: Personally my guess is that there are a lot more real logisticians out there than we think there are. Too many of us put our confidence in what you call "technical competence". Usually that means that if you understand the jargon, you're technically competent. That's the real problem. Each of the logistics disciplines has surrounded itself with a moat of jargon which prevents other people from communicating with them in plain English. This is not limited to logistics, Doctors and Lawyers do it also to prevent ordinary people from understanding their professions. If you want to go a long way toward building real logisticians, destroy the jargon barriers and go back to using English.

AFSC 40XX: Your use of the terms retail and wholesale logistics is unclear. Maybe one has to be a pure logistician to understand these terms, but I've never heard them before and an not sure what they mean in the context of this survey.

AFSC 40XX: We will never keep super people in TAF, MAC or SAC as long as all General promotions are made in AFLC.

AFSC 40XX: I am not sure what your definition of wholesale/retail logistics is. I have spent all my 19 years in aircraft maintenance except for about 8 months training in AMOC [Aircraft Maintenance Officers Course] at Chanute Air Force Base and SOS [Squadron Officer School]at Maxwell. There are too many variables to give good generalized answers to questions 68-77.

AFSC 40XX: I question the intent of this survey. It appears that we're trying to make our career bigger than life. I categorize myself as a doer! Officer first, maintenance officer second.

AFSC 40XX: I believe that the Air Force needs both logisticians that specialize in one or two key areas and a lesser number that gain a more general knowledge across the spectrum. The few generalists become general officers in logistics. However, they need to be able to call upon senior logisticians in each key area who have a great depth of knowledge in their areas. This in-depth knowledge allows them rapid, thorough appraisals of problems and recognition of solutions without the need to take undue time to learn all aspects of the situation first. These "specialists", however, need to have as much background in every possible part of their specialty (for example, munitions storage area, munitions flightline loading, squadron maintenance supervisor, IG [Inspector General] team inspector, command maintenance standardization and evaluation team (MSET), NAF/MAJCOM maintenance staff officer, maintenance squadron commander, etc.).

AFSC 40XX: Logistics is a very diverse career area and I suspect that you will get very different responses to your survey. I would not expect a career maintenance officer to answer the same way that someone in contracting might. Also the need for a broad knowledge of logistics will vary due to the job. A log planner would need much broader knowledge than a person working one area of logistics.

AFSC 40XX: Nice to know someone's interested.

AFSC 40XX, 0046: Survey should have drawn a distinction between "technical competence" and "technical understanding". I'm not sure that there is common understanding on the definition of "technical competence". In my view, technical competence connotes that one does the work (labor).

AFSC 40XX, 0046: [Regarding questions A and B on rating characteristics] Someone is spending too much time in text books. Everyone is their own blend of these and all combinations can lead to success.

AFSC 40XX, 0046: Duties and responsibilities of 6624 AFSC seldom lead to effectiveness as 6616 and then an effective senior logistics manager. Experience in 40XX and 64XX is much, much better. Why? Professional organizations most valuable as a forum of gathering. Yet attendance limited due to cost. Should be formalized within the service and part of PME for logisticians.

AFSC 40XX, 0046, 0096: Theoretically, it would be nice to get an advanced degree in logistics or a logistics specialty (i.e.,supply, maintenance, etc.), but most of us never get the opportunity. The people who seemingly get ahead are those who work hard in their specialty, look out for themselves and don't get shunted off into less desirable career fields, ROTC jobs, MAAG jobs and perhaps safety. These people also must get their PME done on their own and earn their masters degrees while working a full shift each day. We maintenance/logistics officers are told how important we are -- yet most of us never get a chance to shine in the area where we could really be used -- AFLC! Many of these three digit office jobs at the ALCs are given to bright and shiny pilots with minimal or no maintenance, supply, or logistics experience. I applaud Lt Gen Marquez's plans to reinforce and enhance career progression of the real logistics officers. Most of us real logisticians never get the chance to get into AFLC. We've been out here working in the trenches -- where the work is hard and we are told we can't progress to AFLC because we've never been there -- unless you have a sponsor!

AFSC 40XX, 66XX, 0046: Reference questions 73-77. A senior logistician should have a basic knowledge of all logistics areas, but the need to be "technically competent" is not there. It is far more important to be flexible and have the ability to motivate. Along with this you need good common sense tempered with a sense of humor.

AFSC 40XX, 66XX, 0046: No reference was made to the CPL or AFIT Certification program. Some of us are self taught. I don't think we are a logistics community...the doctrine is changing, we are now combat support...see Air Force Journal of Logistics, Winter 1986, pages 10-18. Questionnaire didn't seem to give much weight to acquisition experience. Questionnaire didn't give any recognition of the need we have to be smart in information systems or MMICS/WWMCCS. Questions should have been asked [to determine battle staff experience]. I learned the most about logistics/management/ etc. in the wing command post and maintenance control.

AFSC 40XX, 66XX, 0046, 0096: Senior logisticians are making or allowing decisions to be made concerning reliability/ maintainability without having first hand knowledge of the consequences of poor R&M. This lack of field experience results in the lack of "shoe pounding on the table" when the R&M trade offs are negotiated away. Most other poor logistics decisions can be overcome, but R&M problems are difficult to reverse. We are here to fly airplanes. Significant experience at base level is critical to understanding how that is done and the problems that tend to prevent it. Many people do not understand that.

AFSC 60XX: Good survey! Good cover letter! I hope we stop the current trend toward making every logistician know a little about everything. Our biggest problem is that no one has any depth of knowledge in anything! In a 20-30 year career no one can become expert in all areas of logistics -- there simply is not enough time. We need to develop more specialists, not more generalists. Our specialists will be able to make real improvements in their functional areas. Right now too many people are chasing the elusive butterfly of generalization to the detriment of every functional area.

AFSC 60XX: Multidisciplined experience helps, but is not critical. Being somewhat ignorant (or not terribly competent) in related disciplines frequently helps overcome functional bias and brings out questions about the things the "experts" take for granted. Let's concentrate on management and personnel leadership skills. The fact that we are all "different" in background/experience is what makes the Air Force and especially the logistics career field so exciting/rewarding. We should give about as much emphasis to multidiscipline training/experience as we do to joint assignments. They both help a lot and round out our folks.

AFSC 60XX,0046: Lt Gen Hansen's role as the OJCS Director for Logistics should be used as a case study. The man is fantastic! He's put logistics "on the map" in JCS and has done more to avoid repeating the mistakes of Urgent Fury (Grenada) than any other single person. Henceforth, logistics will be considered and logisticians will be included in planning all operations. All else pails in significance to that. Logisticians can be damn good at their jobs and develop terrific systems for support of operations. But, if they're not invited to the ball, they can't dance. Lt Gen Hansen didn't start out as a logistician, but he is our best spokesman. His traits, characteristics and insights -- plus an expose of what he did to get logistics recognized -- would be a most important adjunct to your study effort.

AFSC 60XX, 0046: PCE is a term I've never heard. I think AFIT/AF should resume civilian institutions programs.

AFSC 64XX: [Regarding questions 73-77] The senior logistician should be technically competent in one of the logistics disciplines and have sufficient broadening experience to have a working level knowledge of the other disciplines. Our system does a poor job of building generalists. I believe the system should intentionally create about 35% logistics specialists, the rest, logistics generalists.

AFSC 64XX, 0046: Current PME has logistics blocks of instructions/education. Generally those blocks are of little value to loggies and non loggies. They could be of much more value.

AFSC 64XX, 65XX: Logistics is so large that it is difficult to generalize. I have been in fuels and procurement my entire career. Yet, fuels was combined with supply as a discipline in the mid 70's, so I carry a supply AFSC without ever having served one day in supply. I know officers who have spent their entire career in supply and are now General officers. Conversely, I know others with mixed backgrounds in supply, maintenance, log plans, etc. and are highly successful. Also many of our Colonels and General officers in logistics came via the operational community. I think that future officers should be encouraged to work different disciplines and that more emphasis should be placed on developing leadership and communication skills.

AFSC 64XX, 0096: Yes, we should not stovepipe those who have potential for senior leadership positions. Multidisciplined experience is essential in less than 20% of the force, highly beneficial in less than 30%, useful in less than 50% and counterproductive for those who have no potential beyond field grade duties.

AFSC 64XX, 0096: [Regarding questions 73-77]. Bad wording -- you can't be technically competent in every one. The answer will be biased by career experience but you should be technically competent in at least one.

AFSC 64XX, 66XX, 0096: Reference questions 73-77, I did not reply because all the questions are interrelated and should read experience in maintenance or transportation or supply. If so stated I would strongly agree. I am a successful "stovepipe - supply" colonel who's never had the same job twice. My experience has been at both retail, wholesale, wing and staff. I would never have done that as a generalist in all the logistics specialties. Commanders in the field don't want a transportation/supply trained generalist to be an F4/AGS squadron commander. They want a maintenance trained specialist. Generalists are okay but don't change the entire logistics structure to develop them. We stovepipers haven't done so bad over the last 20+ years.

AFSC 64XX, 66XX, 0046: This is a superb questionnaire. Senior logisticians must be multidisciplined and must rotate often between wholesale and retail logistics. Most important is frequent contact with the ultimate user -- the combat logistician at squadron/wing level. Education is good to round off an officer but basic experience is most worthwhile. The "worst" loggie is one who entered the field at staff level and stayed there. That person knows the rules and bureaucracy -- nice but not much value to the grunt on the flightline.

AFSC 64XX, 0046, 0096: As noted in the instructions to this survey, questions A and B were difficult to answer. Basically, the characteristics listed are all intertwined and related. Being a good leader means having those necessary communicative skills to motivate people so they can perform at their peak productivity. So does being a good manager -- although I admit, manager has a connotation of dealing more with "things" rather than people. Bottom line as far as I'm concerned is -- know your people and do everything possible to support them! Then your people will take care of the mission.

AFSC 64XX, 66XX, 0046, 0096: Questions 68-72 as well as questions 73-77 are structured in such a way as to prevent the respondent from answering correctly -- does the author consider these responses to be complimentary or mutually exclusive? How about if one should have assignments in (for example) two of five areas or three of five -- not any particular two or three, but just two or three to obtain a breadth of experience. My view is that a senior logistician should have assignments in at least three of (68 through 72) and should have competence in two of (73 through 77) but not any specific ones and I can't express that thought on the response sheet. This invalidates the statistical basis of your question in my view.

AFSC 65XX: Although I stated I had limited direct experience in other functional areas, I have over 22 years dealt with the other functions on a frequent basis to know what the requirements are, some of the rules, policies, etc. One's orientation could thus be considered as more general than overly narrow, as the answers to some of the questions could be interpreted.

AFSC 65XX, 66XX: You never defined "logistics" so I didn't know how to answer many of the questions.

AFSC 0096: In questions A and B, all items other than leadership are subsets of leadership. A good leader will automatically be all of the others.

RATED OFFICERS' COMMENTS:

AFSC 40XX: We need to get on Lt Gen Marquez's bandwagon and grow professional logisticians who have the breadth of experience to justifiably be called "loggies". My greatest concern is that we will continue to "eat our young" 40XXs, etc. and the standby pool of aviators will source our shortfalls. This from a command pilot but a 32 year career maintainer. 431X0 for 8 years; OCS graduate; 1025 for 14 years; 40XX for 9 years.

AFSC 40XX: As a rated officer and "operator" who had the opportunity to pass through the logistics community, I am a strong supporter of providing the logistics command slots to those who "grew up" in maintenance, transportation, etc. The young loggies need role models who came up in the field, going to log schools, etc. While I consider myself fairly competent as an aircraft maintenance squadron commander, I would not be comfortable in the role of a maintenance staff officer or DCM without formal training.

AFSC 40XX: There isn't enough time in the career officer's lifecycle to make him/her an expert in all log areas. Although career broadening is important, experience/job knowledge in his/her primary career field (i.e. aircraft maintenance) is essential. We must fill that peripheral knowledge required for a well rounded "loggie" through PME and other training avenues. There just isn't enough time to gain it all from hands on experience.

AFSC 40XX: The single most important broad area of concern for the senior level maintenance officer is leadership. The single most important value characteristic that the senior maintenance officer should possess is integrity.

AFSC 40XX: I should clarify my qualification as a 4096. I was assigned as an assistant DCM for ten months and then as a DCM for 3 years in a SAC bomb wing. This was my only experience in the maintenance field. It was a thoroughly enjoyable experience and my flying background added immensely to my success as a DCM. A good DCM does not require technical background or [need to] be technically competent, but needs a great deal of management, leadership and knowledge of "how to handle people".

AFSC 40XX: I am on my second maintenance assignment, but have spent the majority of my tour in operations. I frequently interact with logistics plans, transportation and supply. In the supply area, I have attended various base level courses intended for the "worker bees" as well as for the managers. At the Air Staff level, I have participated in the armament and avionics planning conference as a panel member and have worked the operational test and evaluation division monitoring and working supportability issues. If I were to choose one additional educational experience that I would consider highly desirable, it would be an AFIT or EWI education in procurement.

AFSC 40XX: I am flattered to be identified as a "senior military logistician" but in all honesty my experience is limited to 1 year as a field maintenance squadron commander. Most of my career has been in operations (airlift, rescue) with broadening in personnel and of course, maintenance. My limited experience should be considered when considering my responses to this survey.

AFSC 40XX: [An advanced degree is required] only to be competitive for promotion -- no requirement for a degree in logistics. [A senior military logistician should have an assignment in wholesale logistics] just to see the bureaucracy. [Regarding a professional logistics society] they really have to offer more than they do now. [Regarding PME as a valuable source of education in logistics and a course of education for senior directors of military logistics] ICAF is super and available.

AFSC 40XX: I believe you can sum up the thoughts of the question of "a multidisciplined logistician" to the specialist with general knowledge of surrounding logistic fields as--no man is an island. To be an expert in a number of fields cannot be achieved during the Air Force career. Generalists don't get the job done. A nice theory but not practical. Perhaps another coined phrase which has proven truthful -- "a jack of all trades and master of none".

AFSC 40XX, 0046: Good survey. Too many general officers are thrust into the logistics career field from operations, consequently they surround themselves with people they feel comfortable with, not necessarily competent loggies. Senior logistics officers often have limited logistics experience, normally a maintenance squadron to make 0-6 then a DCM or MAJCOM position. This ultimately affects the quality of logistics actions and decisions. This is only mentioned to support the concept of a specific course for senior directors of military logistics. The course for DCMs taught at AU is very good, however, it is too short to cover in depth and breadth the essential elements of logistics required of the senior manager.

AFSC 40XX, 0046: I am a crossover from operations to maintenance. Since 1981, maintenance units I have commanded have never been rated less than excellent on ORIs or MEIs. In 1984, the maintenance unit at Kadena won the Daedalian Trophy as well as every PACAF award for maintenance units. I'm a communicator and I know how to listen.

AFSC 40XX, 0046: This is a confusing questionnaire. What is the objective? If the objective is to be a course of study for logistics, the primary training goal should be to teach job related subjects. Leadership is by far the most important characteristic; however, a course of study should concentrate on the sub-areas. We love training and experience to build leadership but very little training in logistics planning and job proficiency.

AFSC 40XX: My answers may seem contradictory in that I have always been in aircraft maintenance but felt I had a great deal of knowledge in the other logistics career fields. Generally, any career loggie is forced to learn about supply, transportation, plans, the wholesale system, the air staff, etc. Chasing parts, planning deployments, participation in weapon system reviews (MMR), the operational requirements business are all daily areas of involvement for anyone in the hard core loggie areas. Procurement people, because of the legalistic specialization, are outside conventional logistics although it would help all of us if we knew more about their business. Also, individuals who enter the logistics arena at the 05/06 level seldom have enough job knowledge to be successfully involved at the policy making levels of MAJCOM/air staff. Indeed, one of our biggest problems in logistics is that key positions are often occupied by colonels/generals whom the clue bird has by-passed.

AFSC 40XX, 0096: I feel my skills as a manager and leader have allowed me to be successful at all logistics type assignments.

AFSC 64XX, 0046: War is the consumption of warfighting resources. I plan, acquire, maintain, and control the availability and consumption of those resources.
The more I sweat in peace, the less we bleed in war!
The Combat Logistician

AFSC 65XX: The central theme of this questionnaire seems to imply that AFIT is looking for confirmation of a theory that the ideal senior logistician will have broad competence in some or all of the 5 areas mentioned in questions 73-77 gained while serving in assignments characterized in questions 68-72. That seems to describe an army logistician much better than an air force one. I won't even mention the navy supply corps. That's not to say I'm critical of our air force professional development system. Our system, at least in the acquisition business, (which is largely a part of the R&D world rather than the loggies world) does better than the other services in training functional specialists. Our mission is different than the army's and the navy's. Our system recognizes these differences and meets their needs. ALMC has some good ideas though -- pre-command courses and GO orientation courses, for example.

AFSC 65XX: Although contracting is indicated as being in the log community -- it is not at HQ USAF (RDC). How many LGC (contracting) types have become [assistant] LG's or DCS's logistics??? in any MAJCOM or below for that matter.

AFSC 65XX, 66XX: Logistician career: Time for each assignment: two years and move!

Base contracting -- buyer	2 yrs.
Base supply -- procedures	2 yrs.
ILC logistics	2 yrs.
HQUSAF/LE	2 yrs.

Little formal schooling is required over this development period, except initial training. Job knowledge and experience are key, next to broad picture of logistics spectrum resulting from many different jobs. Broad experience necessary for MAAG/MILGP jobs, particularly if a systems sale is in progress.

AFSC 66XX, 0046: I entered the logistics field as a colonel, after 20 years in operations. I respect my logistics colleagues, but find them generally at a disadvantage in contacts with the private sector.

AFSC 66XX, 0046: Good questions. Should ask about joint assignments. They are very important, as you can see I have spent 5 years in them. Also if you are into the log work, really in it, you must deal with the civil service. The people, the regs, and the union. All the log commands from AFLC to DLA are made up of that civil force and you must be able to deal, deal with all aspects of the program. I nave had a good 25 years from POL to my job now and the words of advise I gave to my second lieutenants were "know your job, use common sense and learn to deal with people and their needs and you will meet the mission!"

AFSC 0046: An excellent approach to improving the career field. I am relatively new to logistics (21 months). I'd like to pass on an observation: AFLC does not "grow it's own" senior managers/logisticians. There is no career path for logisticians to grow into senior managers. Therefore, most senior logisticians, like myself, are plucked from the operational ranks at a very senior level. I appreciate the opportunity, but wonder why we don't "groom" our senior loggies better.

AFSC 0046: Use PME for what it is intended -- development of officers. And with the greatest of priorities use the DSMC courses. Stop trying to make logistics a closed specialty. The logistician is in fact a business person in uniform. Your survey has all the indicators of "empire building". We need officers who are leaders and who can think as business persons.

AFSC 0096: In 1973 I attempted to go to AFIT in the logistics field of study. I never could get accepted. Now I'm a DCR by virtue of my rank and the vice at the time of needing an RM asked if I wanted to do it. Best thing I ever did. I love it, but do lack knowledge in areas that I think are vital, i.e., LGS and LGC. Maintenance, transportation and LGX are important, but I believe the other two are probably a tad bit more when it comes to departure reliability and the stickiness of contracts. You need more "pure" logisticians as MAs and RMs. Hope my survey is of some importance to you. I believe I'm not a true representative of your "loggie".

AFSC 0096: Answers reflect 25 years in operations and 10 months as an RM. Extensive background in logistics not required at the base level RM position. Common sense and willingness to learn are a must however.

Appendix H: Primary Survey Database

The library copy of this thesis contains the research database on floppy diskettes. Individuals desiring access to the database should contact the librarian at the Air Force Institute of Technology, School of Systems and Logistics, Wright-Patterson AFB, Ohio.

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There has been an on-going debate regarding the proper qualifications that senior military logisticians should possess. The qualifications of colonels currently serving in the logistics career fields were assessed to determine how well these officers fit a model of the professional senior military logistician developed by Captain Allan D. Overbey. A survey was used to gather information on the backgrounds of current senior military logisticians, as well as their opinions about the model. Another survey was used to develop weightings for the model components. These weightings were used to score the respondents against the model based on their background information. A score of 100 indicated a "perfect fit" to Overbey's model. The observed scores ranged from 24.5 to 100 with an average of 65.8.

This research provided extensive data about the Air Force senior military logistician's background and provided support for the validity of Overbey's model. The research also suggested that current career development policy for Air Force logistics officers may be adequate for producing adequate numbers of well qualified senior military logisticians. Recommendations were made for further research to support this conclusion and for possible uses of Overbey's model as a tool for promoting career broadening among Air Force logistics officers.

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